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A PROCEDURE FOR SYSTEMATICALLY DESCRIBING TEACHER-STUDENT VERBAL AND NONVERBAL INTERACTION IN THE TEACHING OF CHOREOGRAPHY

by

Joanne Margaret Lunt

A Dissertation Submitted to
the Faculty of the Graduate School of
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

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1974

Approved by

Katz K. Barrett
Dissertation Adviser

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of the Graduate School at The University of North Carolina at Greensboro.

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LUNT, JOANNE MARGARET. A Procedure for Systematically Describing Teacher-Student Verbal and Nonverbal Interaction in the Teaching of Choreography. (1974) Directed by: Dr. Kate R. Barrett. Pp. 271

It was the purpose of this study to develop and examine the feasibility of a procedure to systematically describe teacher-student verbal and nonverbal interaction in the teaching of choreography. A multidimensional category system was constructed based upon two major ideas: (1) the theoretical considerations of the components of the choreographic process, and (2) the unity of man as it relates to dance.

The category system, with 34 categories, had four major divisions: Cognitive, Affective, Kinetic-kinesthetic, and Technical. The Cognitive division had eight categories that identified behaviors with knowledge and facts as their focus; The Affective division, with 10 categories, identified behaviors of feelings, attitudes, and opinions; The Kinetic-kinesthetic division had 13 categories and identified specific choreographic behaviors; and The Technical division had three categories and served as an aid in coding class organization and technical details. Four means of identification were common to all four divisions: teacher, student, verbal, and nonverbal.

The four selected judges were trained in the use of the category system in 10 training sessions for a total of 15 hours. Two recording sessions were held one week apart. The coded observations of the judges were used to estimate the reliability, objectivity, and construct validity. Responses of six experts in choreography were used to establish content validity.

Reliability was tested in two ways: (1) intraclass correlation coefficients were obtained by analysis of variance procedures using the combined scores of all four judges for all 10 tapes combined, and for individual tapes in the first recording session, and (2) the intrajudge agreement, the consistency of a given individual's repeated performance, was tested by the Reliability Index to estimate percentage of agreement between the coded observations on the first and second recording sessions for each of the 10 tapes. Objectivity was estimated by examining the scores of paired judges for the same recording session in two ways: first on the totals of all 10 tapes combined, and second, on the totals for each individual tape. The Reliability Index was used in these calculations yielding a percentage of agreement score. Validity was tested by examining the representativeness and comprehensiveness of the system numerically for construct validity, and verbally for content validity.

A correlation coefficient of .78 was set as the acceptable standard for intraclass agreement (reliability) attained by use of analysis of variance procedures. A percentage of agreement of 73 per cent was chosen as the acceptable standard for both intrajudge (reliability) and interjudge (objectivity) agreement using the Reliability Index. The acceptable standard established for construct validity was the use of an individual category for at least 10 per cent of the codings in that division.

Those portions of the system for which greater reliability and objectivity were attained included verbal behavior in The Cognitive Domain, nonverbal behavior in The Affective Domain, and consistent strength in both verbal and nonverbal behavior in

The Kinetic-kinesthetic Domain. These results coincided with the intent of the primary design of each of these major divisions of the category system. Both construct and content validity were considered acceptable. It was concluded that the category system developed shows promise of being a feasible procedure for systematically describing teacher-student verbal and nonverbal interaction in the teaching of choreography.

ACKNOWLEDGEMENTS

Many people have contributed to the completion of this project in special ways. Recognition of the essential nature of their help is acknowledged at this time.

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The use of sensitive videotape equipment, property of The University of North Carolina at Greensboro, was made possible by the cooperation and special interest of Elsa Heimerer and Nancy Porter. Videotaping technique was refined due to the willingness of Lois Andreason, Phyllis Lamhut, and Marilyn Trigg and their students to serve as subjects for preliminary and final training tapes.

Four dance teachers, at their respective institutions, made the conduct of this study possible. Laurice W. Rich of Bennett College, Earlynn J. Miller of Madison College, Virginia Moomaw of The University of North Carolina at Greensboro, and

Nancy T. Zupp of Coker College and their classes were subjects for the final tapes used in the final recording sessions.

Six dance experts examined and critiqued the category system. Dr. Gay Cheney, Dr. M. Frances Dougherty, Dr. Miriam Gray, Dr. Esther Pease, Dr. Patricia Rowe, and Dr. Margery Turner provided important insight into the practical and theoretical ramifications of the system.

The difficult task of being trained as a judge in the use of the category system was accepted by Margarite Arrighi, Elizabeth Bressan, Ann Craft, and Shirley Ferguson. The diligence with which they fulfilled their commitment, and their buoyant spirits at a difficult time of the year, were heartening to the investigator. The debt to these individuals can never be adequately expressed.

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CHAPTER I

INTRODUCTION

Dance has enjoyed a tremendous upsurge in the United States in recent years. National and State legislation has been largely responsible for the increase in availability of dance for both the spectator and the aspiring student (Siegel, 1972). No longer is it necessary to live in proximity to the well-known cultural centers in this country to see live dance performances. Tours, residencies, and funding for experimental school programs all have served to heighten public excitement about the aesthetic and educational values of dance.

Dance is pivotal among the arts. Its uniqueness lies in the use of the human body. The kinesthetic element in human movement, ". . . which gives sensuous reality to aesthetic perception in all of the arts, is deliberately and systematically cultivated in the art of dance (Phenix, 1970:12)." The task of the choreographer is to create the dynamic image using the body moving through space, in time, and in relation to gravity. The transience of human movement makes the process and the product a constant challenge to the choreographer.

The symbiotic relationship between the choreographic process and its product was made clear by Smith (1968:8-9) when she stated: "Dance has always been a way of casting feeling into form and, conversely, of revealing the form and shape of a feeling or

experience." Although more stress may be placed on one aspect of the interactive process, both feeling or experience and form will be present. The choreographer may place priority on the unfolding process of the experience or the feeling of the body in motion rather than the product itself. The outward visible form received by an observer may appear as abstract pathways of motion, or non-motion. At the other extreme movements may be clearly identified by their very specific dramatic or narrative outer form. An open interpretation of Smith's (1968) statement makes possible acknowledgement of both the nonliteral (feeling, experiencing) and the literal (specific outer form) approaches to choreography. Among the exponents of literal dance have been Graham, Humphrey, and Weidman, while Cunningham, Hawkins, and Nikolais are more representative of nonliteral choreography.

Three aspects of the choreographic process are common to both literal and nonliteral choreography: perceiving, selecting, and sequencing. Perception of the idea to be danced may have great clarity or may be an inner sense, a kinetic urge, the shape of which gains clarity through motion. Selection of the movement to best convey the idea or feeling-sense of the dance is an inevitable part of the process. The criteria for selection may be quite concrete in terms of design, for example, or may rest with the intuitive movement sense of "right." The sequencing of the material in a form that seems appropriate, again, is inescapable. The sequences of movement may be governed by clearly defined aspects of musical form, or may be guided by less tangible

reference points such as the surge of the energy flow of movement.

The interrelatedness of motion, emotional response, feeling, and planning the design of a dance in the choreographic process is apparent. The degree to which thinking, feeling, and moving each contribute to the choreographic process has not been determined. Dance teachers, sharing conventional wisdom, support the idea that between the teacher and the student there is an interplay involving spoken and unspoken communication encompassing thinking, feeling, and moving. Identification of the components of both verbal (thinking, attitudes) communication and nonverbal (feeling, moving) communication which occurs in the choreographic process needs to be made to clarify the actual teaching of choreography. Only in such clarification can the teacher's role in the choreographic process become more delineated.

Interest in the study of the verbal and nonverbal behavior of teachers has burgeoned in recent years (Bellack, 1971: Foreword). A plethora of studies is noted in the literature focusing upon verbal teacher behavior occurring in the traditional classroom (Anderson, Brewer and Reed, 1945; Withall, 1949; Medley and Mitzel, 1955, 1958; Hughes, 1959; Smith and Meux, 1962; Perkins, 1964; Taba and Elzey, 1964; Bookhout, 1965; Flanders, 1965; Gallagher and Aschner, 1965; Openshaw, 1965; Webb, 1970). This is in sharp contrast to the paucity of research evident in studies concentrating on nonverbal teacher behavior, inclusive of both gesture and gross movement responses (Galloway, 1962; Timer, 1967;

Heger, 1968; Barrett, 1969; Anderson, Struthers, and James, 1970; Grant and Hennings, 1971).

The method that has been applied most often in the research in teacher behavior has been termed descriptive-analytic. Behaviors are observed, identified, and recorded according to the system designed for the particular study. The result is a detailed, objective, descriptive record of classroom events. The potential contribution of such records lies in the variety of information gathered yielding a base for study of items such as the teacher's influence in the classroom climate, the effectiveness of teaching method, and the characteristics of good teachers. Accurate description of classroom events and subsequent analysis of these events leads to a ". . . deeper understanding of the teaching process (Anderson, 1971:3)." Ultimately, better comprehension of the process of teaching may alter teacher preparation and in-service training programs in order to facilitate more meaningful learning experiences for students at any level of learning.

Little is known, of an objective, descriptive nature, about teacher-student interaction in a choreography class. Justification for such study is in the constructive use of an analysis of teacher-student verbal and nonverbal interaction in choreography. A more comprehensive view of what actually occurs in a choreography class may lead to discovery of different ways to help students experiencing the process of choreography. An understanding of the events in choreography class may, in turn, lead to a deeper understanding of the choreographic process itself.

STATEMENT OF PROBLEM

It was the purpose of this study to develop and examine the feasibility of a procedure to systematically describe teacher-student verbal and nonverbal interaction in the teaching of choreography.

The following questions served as guides for this study:

1. Can teacher-student verbal and nonverbal interaction in the teaching of choreography be systematically described?
2. Can observers be trained to use the category system reliably and objectively to identify teacher-student verbal and nonverbal interaction in the teaching of choreography?
3. Can a system for describing teacher-student verbal and nonverbal interaction in teaching choreography be developed that has construct and content validity?

DEFINITION OF TERMS

Terms used in a special way in this study are defined as follows:

1. Affective Domain: The aspect of teaching and learning that has as its primary focus the attitudes, values, and feelings of an individual.
2. Choreography: The study of how to compose dances.
3. Cognitive Domain: The aspect of teaching and learning that has as its primary focus factual information and

its utilization in simple and complex mental operations.

4. Dance: A uniquely dynamic form given shape through human movement.
5. Interaction: "Mutual or reciprocal action or influence", by Webster's definition (1970), between two or more individuals in the class situation. This action occurs at any level(s) in any Domain(s).
6. Kinetic-kinesthetic Domain: The aspect of teaching and learning that has as its primary focus dance.
7. Movement: Apparent or actual physical change of place in space. In this study the term is used synonymously with movement-motion.
8. Nonverbal behavior: Gesture, body movement, body position, and facial expression with conscious or unconscious intent to communicate.
9. Recording: The pencil and paper activity of the judges to code the behaviors viewed on videotape films.
10. Student Behavior: The student's action, verbal and nonverbal, to initiate responses, and/or respond to the action of another person(s).
11. Teacher Behavior: The teacher's action, verbal or nonverbal, to initiate responses, and/or respond to the action of another person(s).
12. Verbal Behavior: Oral declaration of fact, description, feeling, or judgment.

ASSUMPTIONS UNDERLYING THE STUDY

The following assumptions were accepted in regard to this study:

1. Insight gained into the instructional process as used in the teaching of choreography will enable teachers to select instructional procedures and content from a sound rationale.
2. Knowledge of how teachers actually behave while teaching choreography is important to more effective planning of teacher education programs in dance.
3. Members of classes taped are representative of the interest and ability of the student of choreography.
4. Teachers taped provide a representative sampling of approaches for teaching choreography.
5. The teaching-learning process, as observed in the classes taped, has interaction patterns that are representative of choreography instruction.
6. The teaching of choreography can be categorized and described systematically.
7. A lesson may be described in three sections as defined for this study: beginning, middle, and ending.

SCOPE

This study was limited by the following factors:

1. The system developed for this study was applied only to choreography classes in modern dance.

2. Classes selected for taping had choreography as their primary focus.
3. Only the teacher-student verbal behaviors that were clearly audible on the playback of the video tape were categorized.
4. Only the teacher-student nonverbal behaviors that were clearly observable on the playback of the video tape were categorized.
5. Professional preparation and instruction classes being conducted at The University of North Carolina at Greensboro, School of Health, Physical Education and Recreation had priority in the use of the audio-visual equipment. Scheduling of taping sessions was determined after the University schedule was known.
6. Taping of classes occurred within the time limitation of seven consecutive weeks.
7. Four teachers currently teaching in college dance programs were selected to be taped.

CHAPTER II

REVIEW OF LITERATURE

The literature reviewed is divided into two sections. In the first section broad concepts that underlie choreography are presented, followed by the more specific elements in movement that are common to a choreographic piece. The second portion focuses on the analysis of teacher behavior. An historical and topical perspective of the design of teacher behavior studies is followed by a review of selected studies that influenced the development of the category system associated with this study.

CHOREOGRAPHY

Choreography has been referred to most frequently as the art of planning and arranging dance movements into a meaningful whole, a finished dance. There have been many views related to creating a dance, but two major ideas have appeared constant: the nature of the choreographer himself, and the core components of dance. Variation was apparent in discussion of these two ideas, and in the application of the dance components to the actual choreographic process.

Broad Concepts Underlying Choreography

Three ideas have emerged as basic to most modern dance choreography: (1) man, the creator-choreographer, functions as

an integrated thinking, feeling, and acting being, (2) movement is the substance or material of dance, and (3) dance is literal or nonliteral as an expressive form.

Creator-choreographer, an integrated being. Several noted choreographers or teachers of choreography have suggested that there are differences in the degree to which thinking, sensory action, and kinetic response are utilized separately or in combination by the creator-choreographer. The concept of man, the unified being, functioning as a choreographer has appeared universal in its acceptance.

Lippincott (1969:6), writing about Horst, noted that his academic view of the economy of movement and its manipulation inferred an emphasis on the thinking, factual aspects of choreography. However, Horst (1961:14) had reaffirmed his belief in the unity of man when he referred to the ". . . deep responsiveness between the body and mind /as/ the act of the dance is formed."

Cunningham stressed the sensory-action view of man but did not negate thinking as it contributes to intuitive judgments. Cunningham has stated: "I just try things out, and my eye catches something in the mirror, or the body catches something that looks interesting . . . it's all in terms of the body . . .(Tompkins, 1968:246)." The interdependence of the sensory, motion, and thought processes in choreography was implicit in Cunningham's comments.

Sheets (1966) emphasized the kinetic sense of creating forms for the dancer-choreographer. Consciousness of the body in movement, that lived-in experience of forms in the making, was considered basic to the creative function of the choreographer (Sheets, 1966:141). The choreographer's approach is a deep sensory awareness of motion as well as a cognizance of forms inherent in movement as it emanates from the body. Sheets (1966: 137) related cognizance of form in movements and the evaluation process in this way: "The intuition of the form as she creates it is the basis for her reflective judgments upon that form." In the opinion of Sheets (1966), the kinetic sense was primary in creative function, with thinking and feeling clearly contributing to the consciousness and awareness of the movement form.

More direct assertions as to the unity of man were made by Krevitsky (1970:5-6) when he reviewed recent statements by H'Doubler:

> The miracle of moving is connected with the miracle of knowing and thinking and acting. . . . Movement does not need mind for its existence but does for its clarification.

Movement is the basis for dance. The prominence of the terms moving, acting, motion, and movement in the preceding discussion of the creator-choreographer accentuated the belief that movement or motion is the substance or material of dance. Sheets (1966:130) agreed firmly when she stated ". . . movement and only movement is the basis for dance." There is little disagreement that movement is the substance for dance, however, more recently

there has been evidence of diversification of the acceptable range of movement in the dance art.

Sorell (1969:3), quoting Waring and Cunningham, revealed some extremes in the direction of dance. Waring stated that "Dance is any aimless movement-any movement without an object in mind. . . (Sorell, 1969:3)." Statements such as these have expanded acceptable movement sources to include the more pedestrian motions, sometimes alluded to as "found movement." Cunningham identified movement as a special aspect of dance in his program notes quoted by Sorell (1969:3):

> Dancing has a continuity of its own that need not be dependent upon either rise and fall of sound (music) or the pitch and cry of words (literary ideas). Its force of feeling lies in the physical image fleeting or static. . . .

Nikolais reinforced the basic concept that movement is the material or core of dance by placing in perspective the past and present interpretation of the substance of dance. Nikolais stated:

> We are now in a new period of modern dance, and it is a period of new freedom. All the arts, we find, are now becoming vitally concerned with the direct and poignant translation of those abstract elements that characterize and underlie an art subject (1966:63).

The former emphasis of dance, and of all of the arts, was on the literal, concrete manifestation of the times (Nikolais, 1966:63). Movement-motion, or the polygamy of motion, light, sound, and shape was the broad base for dance used by Nikolais. His awareness of the totality of movement was an

affirmation of movement as the base for dance, and exemplary of his view that "The greatest gifts given to man are his ability to think in terms of abstraction and his ability of transcendence (Nikolais, 1966:64)."

Historically, the traditional view has been that man's basic impulse was to communicate through movement, whether motivated for social, religious, or psychological reasons. Whitehouse (1970), concerned with process more than product, has grappled with what it is that man does as he dances, as an artist and as a man. Metaphorically stated, man swims in the river of Life. Movement is the substance of Life. It is the meaning and condition of being alive. Whitehouse (1970:64) concluded, "After all, it is Life that dances."

Movement has been viewed with differing emphases: Cheney and Whitehouse (1970:68) focus on the deeply personal sensitiveness one has of the body in motion; Nikolais (1966) places movement-motion as a portion of the polygamy of total theatre, freed of literal subject matter orientation; and Waring (Sorell, 1969:3) interprets movement broadly to mean any action without an objective. Both Nikolais (1966) and Sorell (1969) have indicated that movement is accepted as the base for dance. Also, they have pointed up the breadth of the aims of dance with special reference to a shift from the domination of the concrete, literal content toward greater sensitivity about meaning beyond the literal and materialistic surface (Sorell, 1969:3; Nikolais, 1966:64). The terms literal and nonliteral have become common

as a means of distinguishing between the two approaches to choreography. The appropriateness of creating dances without specific literal meanings has been questioned by critics of nonliteral choreography. Although there have been differing views about the meaning to be conveyed by dance, the recognition of the movement-motion base and the necessity to use the physical presence of the human body to create dances has been constant in the writing of proponents of both literal and nonliteral dance.

Literal and nonliteral dance. A specific message, perhaps in the form of a dramatic literal statement or an emotional expression of the condition of man has been the accepted "traditional" nature of meaning conveyed by dance. More recently, dance has veered sharply away from commitment to a specified meaning that is unmistakably presented for audience acceptance. This more current nonliteral dance has been ". . . labeled as abstract because its movements are not traditional in form, style, or aesthetic values (Turner, 1971:4)."

The traditional aesthetic view has been based on the imitative and representative view of dance. Laban (1971:4) was not in complete accord with this view when he stated: "Movement in pure dancing does not need to adapt itself to characters, actions, epochs and situations." In Laban's view, meaning was gained from the play of rhythms and shapes which themselves stem from an inner drive to move. He (1971:4) approached some of the nonliteral views in stating that: "In pure dancing the inner drive to move creates its own patterns of style and of striving

after intangible and mostly indescribable values." In her writing about nonliteral approaches to choreography, Turner (1971:6) expressed the idea that a dance should have a value in its very existence as ". . . a unified matrix of kinetically designed movement and motion."

The preceding brief remarks have indicated that one difference between literal and nonliteral dance is in the product. Brief examination of the process of choreographing in both styles indicated similarities in sources for dance yet differences in the scope of their use.

Hawkins (1964:96) stressed experiences, feelings, the inner vision, or images of the creator as the sources of dance. Notably absent from this collection was reference to literary ideas, while the less tangible, sensory base was stressed.

Humphrey (1959:110) expressed her preference ". . . for conscious motivation and . . . communication about people to people. . . ." In her writing, Humphrey (1959) has linked motivation and sources for dance as one. She suggested that there needs to be conscious attention to the idea whether it is abstract or literary. The motivation must be examined thoroughly to discover the elements to be used to make the communication unmistakably clear to an audience (Humphrey, 1959:110-114). Humphrey (1959) approached dance with a strong commitment to the audience. It seemed important that the choreographer's meaning be the same as that which the audience perceived. In a very narrow frame of reference this reflected the concrete or literal approach to

choreography. However, as a choreographer, Humphrey (Cohen, 1972) practiced a more broad interpretation of literal dance, particularly in the use of abstract ideas as sources for dance.

Turner (1971:64-65), summarizing the nonliteral views, listed the sources of motivation for dance in three broad categories: psychological, physical, and spatial. She further delineated these categories by emphasizing that the purpose in using these three sources was for their own validity, not as they contribute to dramatic content. The similarity of the sources may be noted among Hawkins (1964), Humphrey (1959), and Turner (1971). The primary differences are in the use of concrete, dramatic or literary ideas and the effect of the degree of commitment to an audience on shaping the dance material.

As there have been broad concepts underlying choreography presented in the literature, so have there been elements inherent in movement and common to a choreographic piece. Those elements that have been agreed by the authors represented will be labeled as "common." Other elements will be considered as variables. The common and variable elements will be discussed in the following portion of this review.

Common Elements Present in a Choreographic Piece

There is agreement among writers that Time, Space, and Dynamics are the primary elements present, with varying emphasis, in a choreographic work. These elements, synonymously called factors or basic components, are accepted in the dance literature as necessary to the aesthetic unity of a dance.

Time. Of all the elements Time is the one factor with fewest interpretations. The authors reviewed stressed two aspects of time most frequently: meter-phrase, and tempo-speed.

H'Doubler (1957), Horst (1961), and Turner (1971) identified meter or non-meter as it relates to the time signature in music. An accent, or series of accents, at selected intervals, provided an orientation for grouping intervals of music and movement together for the composer-choreographer.

Hawkins (1964) and Horst (1961) used the term "phrase" to refer to the systematic groupings of pulses, or a series of grouped intervals. Grouped phrases, in turn, provided the overall rhythmic form or structure of a piece (Hawkins, 1964; Horst, 1961).

A view of Time, less bound to metric intricacies, has been used by Nikolais, Cunningham, and Laban. Nikolais (1966) perceived Time as sound, and as a part of a total environment. Laban (1971:85) worked with the duration of an interval, or Time in a non-metric scheme, in relation to contrasting concepts such as quick and slow. Cunningham (Turner, 1971:11), interested in exploring non-metric Time, has used chance means to create a continuity of Time as opposed to the use of a metric pulse.

Tempo-speed have been used synonymously by the authors reviewed. Tempo may relate to the designated metronomic rate of speed to be used in playing a piece, or may be a part of the overall view of the rate of execution, planned or otherwise, used by the dancers in a piece.

Sorell (1969:3) has reflected Cunningham's view of Time as something with continuity, not dependent upon the rise and

fall of sound or music. Long noted for his superior abilities with the intricacies of rhythm, Cunningham has used this skill in the application of chance as one means to establish tempo, and variations in the speed (Tompkins, 1968). Hering (1971:70) pointed out that, ". . . energy manipulation . . . is the essence of Cunningham's choreographic contribution." Tompkins (1968:250) highlighted the aesthetic effect of rhythm, and tempo-speed used sensitively by Cunningham in the following comment:

> . . . stillness is not just a pause between movements; like the negative volumes in a Henry Moore sculpture, Cunningham's still points have a distinct expressive power of their own . . . .

Nikolais, Cunningham, and Laban each have expanded the concept of Time. Cunningham, in particular, has used new means of diversifying tempo-speed. They have stressed the relationship of the Time element to the totality of the choreography. Space has been alluded to as a part of the totality, especially by Tompkins (1968) and Nikolais (1966) in the preceding discussion.

Space. The common terms used in discussing Space are level, direction, and design or shape. Level has been described as place in space inclusive of the planes in space and a particular point in space (H'Doubler, 1959; Laban, 1971).

The concept of the sphere of movement was basic in Laban's (1963) discussion of Space. Laban (1963:85) thought of the mover as being in the center of a sphere in which all points of the imaginary inner wall could be touched by his hands and feet, without ever changing his stance or his place of support. Outside of

this individual, or personal sphere ". . . lies the wider or 'general' space which man can enter only by moving away from the original stance (Laban, 1963:85)." The dimensions used in simple spatial orientation are direction and counter-direction, each having three components: high-deep, right-left, forwards-backwards. These dimensions form a three dimensional cross which

> . . . can be placed into an imaginary cube within one's personal sphere where it's centre coincides with those of the cube and the body. From this centre and between the dimensions run oblique lines towards the corners of the cube. We call them diagonal directions . . . (Laban, 1963:86-87)

Both Laban (1963) and Hawkins (1964) indicated that particular emotional responses may be evoked by using particular aspects of Space. Hawkins (1964) identified these aspects as the horizontal, vertical, and diagonal planes in Space. Laban's (1963:36) description of a "table pattern," and "a wheel pattern" parallels the horizontal and vertical planes described by Hawkins. Laban's (1963) third pattern, the "door," connected points in Space making a two dimensional pattern.

Hawkins (1964), and Thornton (1971) writing about Laban, stressed the interdependence of Space, Time, and Dynamics factors. Hawkins (1964:45) suggested that the expressive value of movement is determined by the relationship of the body to the pull of gravity creating different dynamic states of tension and quiet. More carefully analyzed, Hawkins' statement showed that the direction of the pull of gravity, and the place in the body where the pull is felt are the Spatial factors; stillness and motion (Time)

are entwined with the energy manipulation (Dynamics) in the created states of tension and quiet. Thornton (1971:28) has summarized Laban's ideas of the importance of the Space factor in expressive movement in this way: "To Laban 'space is a hidden feature of movement and movement is a visible aspect of space. . . '."

Design in Space can be viewed as a static or dynamic state. Humphrey (1959) made this clear when she explained symmetry and asymmetry in reference to body design, as well as for the use of numbers of people in the stage space. Horst (1961:30) explained space design in dance by comparing it with the melody in music when he stated:

> If melody in music is defined as relating to the profile, the outer shape, with no thought of an inner physical quality, in dance it has to do with movement delineations in space-the contour, the outline- and not with any inner muscular-physical quality.

This can be interpreted to mean that designs are formed as the body shapes and reshapes itself traveling in and through Space.

Consistently, Nikolais has reflected his ideas about the integration of motion-sound-shape-color in reference to the totality of theatre. Singling out an element for examination negates Nikolais' commitment. However, the importance of Space and, in particular, design has been apparent in the ways in which he has used color, material design, huge movable set pieces, and de-humanization of the body by adding to it extensions into Space. The unique way in which Nikolais has exhibited his sensitivity to Space has been described by McDonagh (1972:212) in this way:

> To emphasize the shape and plastic possibilities of the dancer moving in space, costuming was designed that broke up the outlines of the human body in a way that a prism might separate the component colors of white light.

Nikolais regarded the human body ". . . more as an articulated form with a variety of energy potentials and possibilities" than as the center of emotional turbulence (McDonagh, 1971:212).

The way Cunningham uses the body in Space differs from Nikolais. It is his intent to reveal the body as much as possible so that movements that are based on the body's natural expressivity may be seen. It has been noted that Cunningham uses large lateral movements with his dancers enabling the use of a great deal of stage space. The emphasis on lateral movements was cited as a contrast to the more vertical dimension used in ballet techniques (Tompkins, 1968:263).

Tompkins (1968) has suggested that Cunningham and Pollack have created unique environments by utilizing the same concept in their respective art forms. Spatially, their concern was for no fixed center and an "all over relatedness of shifting movement" (Tompkins, 1968:265). Inherent in accomplishing relatedness of shifting movement were other aspects of Space such as focus, body facing, direction, and design. The use of circular, angular, and random floor patterns, small groups, or individual dancers independent of one another is prevalent in Cunningham's choreography. These spatial factors, as well as the intricate blending of Time variations, have been noted as contributing to the overall "interesting" impact of a Cunningham piece (Tompkins, 1968:265).

Direction, another aspect of Space, has been referred to as the facing or the line of travel of the dancer. Specifically, this is inclusive of forward, sideward, backward, the degrees between each, as well as the pathways of movement through Space. A pathway is formed when the dancer moves from one place to another. The movement can be described as a ground or floor pathway, or an air pathway. It may be characterized further by the shape of the path, curved or angular, which is created when three or more points in space are connected (Laban, 1963:92-94). Hawkins (1964), H'Doubler (1957), and Humphrey (1959) identified pathway as synonymous with floor pattern, further qualified by the curved or angular shape of the path. The term "focus" was frequently used interchangeably with body facing as it applies to direction (H'Doubler, 1957; Humphrey, 1959). The term may also be indicative of a visual contact point for the dancers used to create any of the following effects: the line of force and motion of the dancers is concentrated giving the appearance of a more direct statement; strong audience magnetism toward that spot; and provision of a sense of unity to the movement of several dancers (H'Doubler, 1957; Humphrey, 1959).

Varied interpretations of selected aspects of Space have been presented. The need for the presence of both motion and stillness in Space has been identified. It was indicated that Space is inextricably interwoven with Time and Dynamics in the creation of a feeling or some form of meaning.

Dynamics. Texture, quality, energy, and force were the most prevalent terms used referring to the variations and contrasts in the intensity of movements. H'Doubler provided the "raison d'être" for inclusion of Dynamics as an element of a choreographic piece. There is a constant flow of energy in the skeletal muscles of the body as they support the body and maintain balance between parts of the body. This balanced state creates ". . . an elastic tension which is inherent in our organic structure and is the basis of technique for expressive movement (H'Doubler, 1957:83)." Shifts in degrees of tension result in differing qualities of movement which H'Doubler identified as swinging, piston-like, percussive, sustained, collapsing, and flowing (H'Doubler, 1957:81-83).

Weight was the term used by Laban (1971) to denote varying degrees of tension applied to movement. His concept centered upon the amount of force used in resistance to weight, and was expressed by such terms as strong, heavy, light, and weak. The amount of force, visible as degrees of tension in bodily action, was presented in terms of a ratio. The 2:1 ratio identified as strong, 1:1 ratio as normal, and ½:1 as weak (Laban, 1971:48).

In Laban's work, quality or texture in movement was derived from the use of weight, in combination with varying aspects of speed of movement, amount of space, and type of flow. The importance which Laban placed on ". . . the right proportionality of Weight, Space, Time, and the control of the Flow of movement . . ." was in terms of efficiency (Laban and Lawrence,

1947:4). He stated that "The lack of sense of proportion is the main stumbling-block of efficiency (Laban and Lawrence, 1947:5)." The need for efficiency has been applied to work effort and to the effectiveness of dance motion. The way in which Weight, Space, Time, and Flow are used give each amount of muscular activity its distinctive power, shape, duration, and rhythm (Thornton, 1971:42). Laban and Lawrence (1947:17) stated that:

> A person who is unable to control the flow of his movement will never be able to bring material into a precise shape, while people with too controlled a flow of movement will fail in the performance of actions requiring fluent flow.

Laban stressed the value of recognition of the use of motion factors as a means for self-understanding. Further, he suggested that more alternatives for action and movement can stem from training in the coordination of motion factors, or effort training (Thornton, 1971:45-47). The importance of effort actions to dance were described by Laban (1963:54) in this way:

> The finer shades of effort, once recognized, show certain coordinations which become visible in their external projection in movement. Those coordinations are essential in free dance technique.

Dynamics in the work of Nikolais and Cunningham has been described frequently by the term energy. Nikolais showed concern for the potential of energy itself in human movement, rather than the use of energy flow as expressive of a linear development of an idea (McDonagh, 1970:212). He used the interaction of forces of movement and motion to produce contrast without ". . . settling for the limitations of the human body nor its human condition

(Turner, 1971:9)." Nikolais expanded the potential energy possibilities by considering the dancer as a form to be articulated (McDonagh, 1970:212). The sense of varied energy is present in Turner's description of experiencing a Nikolais concert as being in

> . . . a world of changing motional values into colorful splendor, . . . ; a world of fleeting images, surprises, human subtleties . . . ; . . . fleet-footed jointlessness, . . . sentient images, dynamic excitement. . . (Turner, 1971:9).

Hering (1971:70) reflected something of the way in which Cunningham manipulated energy in the statement that follows:

> . . . Dancers meeting and parting, darting into the air or suddenly crumpling to the floor, . . . standing beautifically still or picking their way about on tip toes. . . .

It is clear that Cunningham employs speed, weight or force, and Space in producing the Dynamics of his dances.

Horst (1961), with an introspective sensory approach, treated the dynamics of motion in terms of "texture." He called it the physical element in dance, the ". . . inner, physical muscular consciousness which colors movement and gives it its' particular quality (Horst, 1961:48)."

The terms commonly associated with Dynamics have been presented. The variations in terminology and interpretation among authors was evident, while the recurring central point made was of the interrelationship of forces necessary in creating energy, tension, and texture in movement.

Variables Present in a Choreographic Piece

Form. Form, or organization of forces resulting from the internal structure of the dance, ". . . gives an order or wholeness to dance (Hawkins, 1964:87)." The importance of form was made clear by Hawkins when she stated:

> Form is not a thing in itself, but instead it is a symbol that always points to something beyond itself. It is the means of revealing the intent of the dance (Hawkins, 1964:88).

Form in dance is not an arrangement of the materials, but it follows the function, and is appropriate to the purpose of a given dance. It was Hawkins' concept that form is organic in that it comes ". . . from the internal structure and the relationship of forces set in action by the juxta-position of movement, qualities, and rhythms (1964:88)."

It is apparent that the authors represented in this review agreed upon certain characteristics of form that contribute to a good dance. Hawkins (1964) referred to them as characteristics, Horst (1961) labeled them rules of composition, H'Doubler (1957) called them principles of composition, Turner (1971:65) identified them as criteria for resultant form, and Humphrey (1959:59) summed up the characteristics as ". . . a pocket set of rules for truing up a work in progress. . . ." The characteristics of form were most commonly identified with the terms continuity, sequence, contrast, and variety. Harmony, repetition, transition, and climax were found less often in the literature, and especially in relation to nonliteral dance.

Sources of dance. Discussed earlier in the review, sources of dance have varied depending upon the literal or nonliteral perspective. The nonliteral approach tended to negate direct conscious association with emotion and/or meaning. Cunningham made a strong statement stressing this view:

> I don't ever want a dancer to start thinking that a movement means something. That was what I really didn't like about working with Martha Graham - The idea that was always being given to you that a particular movement meant something specific (Tompkins, 1968:246).

Turner (1971) referred to "motional logic" as foremost in the minds of the current nonliteral choreographers as source or content stimuli. The nonliteral dance sources revolved around the idea of motion itself, and produced what Nikolais has called an environment. It is not the concern of the nonliteral choreographer to communicate a specific idea that will be grasped unmistakably by the audience. The literal dance choreographer, due to his stronger reliance on a tangible idea, may have more concern that the audience understand his key motivational meaning. However, each dance product will have form that is observable. The inclusion of a high point or climax in the linear development of a literal dance may provide a more apparent overall form to the dance. Sheets (1966:72) has summarized the ideas about form, and sources of dance indirectly, in commenting about the principles of composition:

> The structural elements (balance, harmony, suspension, etc.) are . . . afterthoughts of people viewing dance and not forethoughts of dancers engaged in creating dance.

Form and sources of content have been considered variables because there is variation in the way in which they have been applied in dance, and in the degree of emphasis or mention each has been given by the authors reviewed. Space, Time, and Dynamics were included by all authors and were determined as common, even vital to being able to create a choreographic work.

Summary

Three broad concepts have been identified as the base for choreography: (1) man, the creator-choreographer, functions as an integrated being blending his mental, physical, and emotional stimuli, (2) movement is the substance of dance, and (3) dance is literal or nonliteral as an expressive form.

There were three common elements in choreography determined as Time, Space, and Dynamics. Form and the sources of content were identified as variables in choreographic work.

Identification of the underlying concepts of choreography and the common elements of choreography provide the background for presentation of the choreographic process. The process will be presented in Chapter III where it is pertinent to the development of the category system designed for this study.

TEACHER BEHAVIOR

Teacher behavior, classroom behavior, and instructional interaction have been examined in various ways. Inclusively, the terms have been used to refer to verbal and nonverbal behaviors,

actions, or events in the teaching-learning setting. The central concern of such research has been ". . . to improve the quality of classroom instruction. . . (Allon, 1970:1)."

Many observation systems for describing and analyzing classroom behavior have been developed, each assessing a particular dimension of the events of the classroom. Broadly conceived, the research in teacher behavior has had two major emphases: teacher description and teacher evaluation. Ryans (1963:292) made clear the distinction between the two categories when he stated:

> Teacher description is concerned with the identification, inventorying, and determination of interrelationships of teacher characteristics and behaviors. Teacher evaluation . . . involves judgments of the quality of teacher behaviors-judgments made in light of agreed-upon educational objectives, expectancies of individuals or groups, and other evaluative criteria approved by the schools and the community.

Studies representative of the teacher descriptive emphasis have as their focus classroom climate, teacher influence, teaching strategies, and cognitive behavior. Teacher evaluative studies deal with rating the effectiveness of teachers, and behavior patterns of the effective and ineffective teacher.

The material presented in this portion of the review of literature includes a brief summary of historical and topical developments of teacher evaluative and descriptive studies, as well as examination of design and procedures used in the conduct of selected research deemed pertinent to this study.

Representative Studies in Teacher Effectiveness

Early attempts to examine classroom behavior were focused indirectly toward teacher effectiveness. Horn's (1914:1) study was designed ". . . to study the distribution of opportunity for participation among the various pupils in classroom recitations." Symbols were devised to identify a recitation or request for recitation, pupil response, uninterrupted repeated recitations, and failure to recite. Observers coded the pupil behaviors and recorded them on the seating chart for the classroom. Horn (1914:11) summarized the intent of his study as follows:

> All that is desired in this study is to show how the teacher distributed the opportunity for recitation among the various pupils according to their ability as she believes this ability to be. It is to measure the effect of her conscious method in so far as she has one, with regard to this distribution.

Puckett (1928) suggested that the scheme which he developed for pupil rating be used by the supervisors to supplement other methods of rating the teacher. The similarity of his study to that of Horn was in the use of the symbols and the seating chart. The difference was marked in that both the quality and the distribution of pupil participation were recorded (Puckett, 1928:212). In the opinion of Medley and Mitzel (1963:255) requiring the recorder to quantify the merit of the pupil's recitation weakened Puckett's study.

A more direct attack on the characteristic differences between good and poor teachers of social studies was undertaken by Barr in 1929. Forty-seven good teachers and 47 poor teachers

were selected for study based on in-service supervisory ratings (Barr, 1948:232). Teaching techniques and behavior patterns were studied by use of observation, time records, stenographic reports, check lists, and questionnaires. The results were presented as a list of 23 most frequent practices of good teachers of social studies, with related frequencies of each behavior among the 47 good teachers (Barr, 1948:232). Reviewing Barr's study, Medley and Mitzell (1963:260) considered the methods for recording inefficient, and criticized the lack of dimensionalization of data into homogeneous scales.

Morsh, Burgess, and Smith (1956) used student achievement as a measure of instructor effectiveness. They supported their particular use of student achievement in determining effective teaching when they stated:

> If it can be determined that students of one instructor make greater gains than do those of another instructor, we can attack the problem of determining what behaviors, traits or characteristics are responsible for the changes produced in the students (Morsh, Burgess, and Smith, 1956:80).

In summarizing their work, Morsh, Burgess, and Smith (1956:87) stated:

> The effectiveness measure used was the actual subject-matter achievement of an instructor's students. . . . The chief results of the investigation were the findings that students' ratings of their instructor's teaching effectiveness, and supervisors' ratings of instructors' verbal facility are correlated significantly with student gains.

Cogan (1956:316), in an attempt to evaluate the effectiveness of the teacher, departed from the trend of teacher observation.

He focused on the impact of the teacher's behavior on the work of his students. Cogan (1956:319) designed his study based on his second assumption which stated that "one of the valid frames of reference for the measurement of teacher competencies is the perception of the pupil, as well as the perception of the experts, supervisors, principals, etc." However, he (Cogan, 1956:319) accepted the assumption that pupil change is the most appropriate criterion of teacher competence.

Cogan (1956) used the Pupil Survey, a group-administered questionnaire, to collect the data about pupils' reports of their teachers' behaviors and of their own self-initiated or required productivity. Cogan (1956:340) felt that ". . . there may be some reason to hope that the measures of teacher behavior and of pupil productivity may be of value in the development of measures of teacher competence. . . ."

Representative Studies in Teacher Description

Those studies representative of teacher description fall into two categories: (1) work illustrative of the 1930 to 1950 time span, and representated by the studies of Anderson and Withall, and (2) the work completed since 1950.

1930 to 1950. Prior to 1956 limited research was completed emphasizing teacher description. In the past two decades a great many studies have been reported that focus almost entirely on the description of what occurs in the classroom rather than evaluation or rating of classroom events. Studies with the

descriptive emphasis deal with topics such as the climate of the classroom, patterns of teacher influence, and strategies of teaching.

Anderson (1939:73) conducted a series of studies on the adult-child relationships of measures of dominative and of socially integrative behavior in pre-school children. Domination and integration were defined using nine categories to record dominative contacts of the teacher and nine categories to record the teacher's integrative contacts. Observers recorded the frequency of teacher contacts with a child or group in appropriate categories. Provision was made for recording contacts that were "undetermined" or "unidentified" (Anderson, 1939:76-77). The development of the Dominative-Integrative ratio was an attempt to begin to answer such questions as how much supervision of a child is too much. The ratio ". . . is obtained by dividing the mean number of the dominative contacts per hour by the mean number of integrative contacts per hour (Anderson, 1939:81)."

Additional work of Anderson and associates was summarized by Withall (1949:348) when he stated:

> Anderson's studies bring out evidence. . . that the main direction of influence in the classroom is from the teacher to the pupil. He has demonstrated too, that reliable patterns of teacher and pupil behavior can be obtained in the classroom through categorizations of their overt behaviors.

Based on the assumption that a teacher's verbal behavior adequately represents his total behavior, and that climate is largely determined by the teacher's behavior, Withall (1949) sought to categorize all types of statements which teachers used

in the classroom. The seven categories, applied to teacher verbal behaviors, were identified on a learner-centered teacher-centered continuum. The first three categories were said to be learner-centered, while the last three were teacher-centered. Category 4 was considered neutral having no influence in either block. Patterns of verbal behavior were determined as learner-centered if the proportion of statements falling in categories 1, 2, and 3 outweighed those located in the teacher-centered categories (Withall, 1949:349).

In conclusion Withall (1949:360) stated that:

> The study. . . represents an attempt to develop a technique for the measurement of the social-emotional climate to the end that, ultimately, fuller understanding and control may be achieved of one of the factors hypothesized to influence learning.

1950 to the present. The interest in the teacher's role, the patterns of influence he can use in class management and the control he provides in teaching were the stimuli for the work of Flanders (1960:2). His work followed that of Anderson and Withall in determining reliable means to describe the Integrative-Dominative ratio, and Social-Emotional climate, respectively. The work of Flanders, reported here, was a model based on a psychology of superior-subordinate relationships, or the set of social skills used by the teacher to control and manage activities in the classroom (1960:2).

Flanders (1960:7) assumed ". . . that verbal communication constitutes an adequate sample of the teacher's total influence pattern." This assumption was similar to that of Withall (1949)

when he stated that a teacher's verbal behavior adequately represents her total behavior. The purpose of the Flanders system of interaction analysis was to provide a procedure for quantifying direct and indirect influence closely related to the teacher behaviors identified by research on classroom climate (Flanders, 1960:9). Direct influence was described as". . . verbal statements of the teacher that restrict freedom of action, by focusing attention on a problem, interjecting teacher authority, or both (Flanders, 1969:9)." Indirect influence was explained as ". . . verbal statements of the teacher that expand a student's freedom of action by encouraging his verbal participation or initiative (Flanders, 1960:9)."

Classroom Interaction Analysis, the system devised by Flanders (1960:18), was a series of 10 categories used by the observer to record and ". . . separate those acts which result in compliance from those acts which invite more creative and voluntary participation. . ." without being diverted by the subject matter. Seven categories, assigned to teacher talk, were divided to represent indirect influence (categories 1-4), and direct influence (categories 5-7). Two categories were for student talk, category 8 for response and category 9 for initiation. Category 10 was designated for silence or confusion.

The concept of interaction analysis has been used widely in subsequent teacher behavior studies (Timer, 1967; Amidon and Hunter, 1967; Minnis and Shrable, 1969; Crispin, 1969; Medley and Hill, 1969, and McConnell, 1971) bearing out the optimistic

view Flanders (1960:121) held of its value and possible potential as a research tool.

Another view of teaching has been taken by Smith (1960). He stated that ". . . teaching is a system of actions intended to induce learning (Smith, 1960:230)." Smith (1960:233) felt that ". . . teaching is one thing and learning is quite another." In the design of his study Smith (1960:233) used a concept of teaching that treated it as a distinctive phenomenon general enough to encompass normative definitions as well as special cases. Smith (1960:233) acknowledged that the actions constituting teaching take place and are influenced by the environment in which they occur but that ". . . the environment is excluded from our conception of teaching . . . because it is not a part of the concept of teaching." Smith's (1960:233) theoretical concept of teaching included:

> . . . all the actions of teachers necessary to explain and to predict the behavior of pupils and the occurrence of learning, though such explaining and predicting cannot be made from these actions alone.

Smith's (1960:236-237) logic of teaching was derived from his assumption that teaching acts consist largely of verbal behavior. He placed importance on what is done with language in instructing, not simply that language is the primary medium.

The logic of classroom discourse was the central concern of Smith's study (1960). Categories were determined after study of tapescripts of classroom discourse. The tapescripts were analyzed as episodes and monologues (Smith, 1960; Smith and Meux,

1970). Episodes were classified according to opening phrases because each entry shaped the character of an episode (Smith and Meux, 1970:29). Thirteen categories were established, several with numerous sub-categories. Smith and Meux (1970:211-228) identified the major categories as:

> . . . defining, describing, designating, stating, reporting, substituting, evaluating, opining, classifying, comparing and contrasting, conditional inferring, explaining, and direction and managing classroom.

Another view of teaching was apparent in the work of Hughes (1962) when she stated:

> . . . the superior-subordinate relationship in the teacher-learner situation, with its culturally bestowed power position over the child, makes it impossible for the teacher to act in the classroom without performing a function for some child, group, or the entire group as recipients (Hughes, 1962:252).

Hughes (1962:251-252) categorized the teaching acts or functions as controlling, teacher imposition, facilitating, development of content, personal response, positive affectivity, and negative affectivity. Analysis of teaching was made from verbatim records of what the teacher said and did, as well as the response made by a child or group, including children's initiatory actions directed toward the teacher (Hughes, 1962:251).

The specific reference to the description of nonverbal behavior as a part of the teaching function was a departure from the way in which Flanders (1960), Smith (1960), and Withall (1949) viewed its importance. Withall (1949:347) assumed that ". . . the teacher's verbal behavior is a representative sample of her total behavior." Smith (1960:236) stated ". . . teaching acts

consist largely in verbal behavior. . . ." Flanders (1960:1) suggested that ". . . nonverbal communication occurs less frequently than verbal communication and the two are highly correlated."

Galloway (1971:71) was of the opinion that "Nonverbal language is the language of values and realities that is transmitted on silent terms." The lasting impact of nonverbal behavior was stressed by Galloway (1971:70) when he explained that pupils: ". . . detecting contradictions between a teacher's verbal and nonverbal behavior will accept the nonverbal as being more valid."

Galloway viewed the nonverbal communication of a teacher on a restricting to encouraging continuum. Inherent in this scheme was the concept of the process of communication as ". . . an action system of nonverbal behaviors that exists in dynamic relationship to the continuing influence of the teacher and pupil interaction (Galloway, 1968:175)." The system Galloway designed had seven categories of nonverbal activity on an encouraging to restricting continuum. Those categories considered as encouraging communication were categories 1-3. These were enthusiastic support, helping, and receptivity. Category 4, pro forma, was a neutral one neither inhibiting nor encouraging communication. Categories 5, inattentive, 6, unresponsive, and 7, disapproval, were considered as inhibiting communication (Galloway, mimeo: 9-10).

The system to describe what a teacher does and to analyze the effects of nonverbal messages and pupil response was of paramount concern (Galloway, mimeo:10). The use of the system by observers, noting the occurrence of a nonverbal message by recording

numbers of the corresponding category in a vertical column, was acknowledged as a difficult undertaking. Sensitivity to nuances, inflections, and subtle cues, influence of verbal communication, and relative position of the observers were cited as some of the difficulties in obtaining accurate information. Galloway felt that tallying in categories was most fruitful through videotape analysis, due to the opportunity for viewing several times (Galloway, mimeo:11).

Galloway (1968:175) indicated both the importance and the difficulty of assessing nonverbal cues when he stated:

> . . . it must be stressed that a greater openness to the occurrence of nonverbal events and expressions, plus a greater awareness of student behavior, is the major key. The feedback-loop for the nonverbal is necessarily contingent in great part on the reflective mirror of student reaction and response.

Galloway (mimeo:12) has stated that the unique combination of verbal and nonverbal information influences meaning. He presented an observation system for combining verbal and nonverbal information using Flanders' Interaction Analysis for recording verbal behavior and his own category system for recording nonverbal behavior. These two systems, ". . . combining verbal categories with relevant nonverbal dimensions affords a unique approach to a complete analysis of interaction in the classroom (Galloway, mimeo:14)." Interaction Analysis was selected because a significant amount of data suggested it could be learned easily and used with reliability. Galloway's (mimeo:14) initial reaction to the combination of his own system and that of Flanders was one of success. It was possible for observers to identify and record

both the verbal and nonverbal behaviors using the three second timed interval scheme devised for Flanders' (1960) original study.

The preceding studies were selected as representative of the development of research in teacher description and teacher evaluation. The studies were not considered all inclusive of the scope of descriptive-analytic research. Observation and identification of verbal and nonverbal classroom behavior, examination of the functions of the teachers' classroom discourse, and application of rating scales for student, peer, and supervisor perception of effectiveness were represented in the foci and design of the research reviewed. The intent of the overview of the development of observation systems for recording and analyzing teaching was to provide an historical perspective for the more recent systems that were important in the concept and design of the multidimensional category system developed for this study.

Research Pertinent to This Study

The work of Gallagher and Aschner (1963), Taba and Elzey (1964), Webb (1970), and Barrett (1969) had particular influence on the development of the present study in teacher-learner interaction in the choreographic process. The content related to productive thinking (Aschner, 1963), and levels of thinking and knowledge (Taba and Elzey, 1964; Webb, 1970), was significant in developing a theoretical framework for the present study. The hierarchical thinking processes and the different ways in which knowledge is used to achieve awareness and consciousness at varying

levels of complexity and abstractness were of special import. The multidimensional design of Barrett's (1969) study provided a model for the present study, as well as insight into ways of categorizing both cognitive and affective behaviors. These studies will be presented individually with particular attention to the theoretical base and procedures that had substantive value for the present study.

Gallagher and Aschner. Gallagher and Aschner (1963:54) developed ". . . a Category system for classifying the thought processes that are reflected in verbal behavior, in the context of group discussion." The purpose of the Category system was to describe ". . . the amount and quality of productive thinking that gifted children do during sequences of class discussion at the junior high school level (Aschner, 1963:54)."

Guilford's Structure of Intellect model provided the base for development of categories determined by Gallagher and Aschner (1963). Guilford's (1959:2-3) model had three classifications of intellectual factors: Product, Content, and Operations. Aschner (1963:58-59) adapted Guilford's Operations as a means of classifying verbal behaviors. Five primary categories were used by Gallagher and Aschner (1963:59) to classify verbal behavior: Cognitive-Memory, a combination of intellectual abilities grouped by Guilford (1959) as Cognitive and Memory, Convergent Thinking, Divergent Thinking, Evaluative Thinking, and Routine. The thought processes included in the category Cognitive-Memory were identified as recognition, rote memory, and selective recall, none of which

necessitated manipulation of ideas (Aschner, 1963:59). Convergent Thinking processes were both analytic and integrative in that the student's response was based on given or remembered data, or a combination of the two (Aschner, 1963:61). The sub-category Explanation was considered major in the Convergent Thinking category, dealing ". . . variously with the conceptual ordering of ideas or phenomena in the substantiation or support of claims or conclusions about matters of fact, or about matters of values (Aschner, 1963:61)." The primary category, Divergent Thinking was subdivided into four categories: (1) elaboration, (2) divergent association, (3) implication, and (4) hypothesis. Aschner (1963:63-64) designed the sub-categories:

> . . . to 'capture' features of verbal performance that are indicative of initiative, spontaneity, ideational fluency, originality and ingenuity, penetration and flexibility in problem solving, and the like.

Evaluative Thinking included three sub-categories and represented ". . . a type of framework within which value-based judgments are requested or expressed (Aschner, 1963:62)." The fifth category, Routine, did not stem from Guilford's model and included both verbal and nonverbal performance as it related to ". . . the typical aspects of the day-to-day direction, conduct, and/or personal reaction to what is said and done in class (Aschner, 1963:65)."

Four trained observers, working independently, coded each tapescript, developed from taped lessons in English, social studies, and general science, or students representing the top five per cent

of the general IQ population in two junior high schools. The independent codings were compared, disagreements discussed, and agreement reached by group consensus (Aschner, 1963:55-56, 67-68). Gallagher and Aschner (1963:68) found that:

> . . . disagreements occur rarely at the primary category level. The percentage of interjudge agreements per unit, at the subcategory level, approximate .69 to .79 on the average. . . . in its present form, the Category system has achieved a satisfactory and workable level of reliability.

Recurrent patterns of thought production in teacher-student and student-student interaction were determined from flow charts on which symbols from coded transcripts had been transferred. Thought units, and group interaction units for particular individuals and for entire class groups were summarized from examining these same charts (Aschner, 1963:68).

All the categories defined in the system appeared on some tapescripts, but some categories occurred rarely, or not at all. Aschner (1963:69) concluded that this was due ". . . more to differences from class to class, and to the ways teachers run their classes, than to the nature of the Category System itself." The proportionate frequencies of verbal production among the five primary categories of the System place Routine and Cognitive-Memory occurring most often on most tapescripts, followed by Convergent Thinking, Evaluative Thinking, and Divergent Thinking in descending order of occurrence (Aschner, 1963:69).

Taba and Elzey. Taba and Elzey (1964:525) examined ". . . processes of thought in the classroom in terms which are

capable of shedding a light on the learning and teaching of certain cognitive skills in the school setting." Taba and Elzey (1964:521) based their study on the assumption that:

> . . . thought consists of specific, describable processes which are subject to training, not in some category of powers which are inherent in the individual. . . .

They sought to create ". . . categories for analyzing thought which described learnable, and therefore also teachable processes of thought (Taba and Elzey, 1964:525)."

Thought processes were identified in three cognitive tasks as concept formation, the making of inferences and the induction of generalizations from interpretations of specific data, and the application of generalizations to explain new phenomena and to predict the consequences of certain events and conditions (Taba and Elzey, 1964:525).

The theoretical base for the study, with special conditions for its conduct, was based on concepts regarding the nature of thought and its development. The first idea was stated as:

> Maturation of thought follows an evolutionary sequence in which the simpler mental operations form a basis for the creation of the increasingly more complex and abstract mental structures (Taba and Elzey, 1964:526).

Taba and Elzey (1964:526-527) pointed out that " . . . a deficiency in mastering the first step, such as the analysis of concrete instances, leads to incapacity to function on the level of the final step, such as the formulation of generalizations."

The second concept that influenced the design of Taba and Elzey's study was called "cognitive commerce." Explaining

this concept, Taba and Elzey (1964:527) stated:

> . . . the cognitive operations are an active transaction between the individual and his environment or the material. . . . children inevitably build mental schemes with which to organize the information they encounter.

The third concept related to hierarchical organization of information and thinking. Taba and Elzey (1964:528) stated that the idea that thought matures through a progressive and active organization and re-organization of conceptual structures is of relevance. They suggested that learning tasks need to be rotated, ". . . calling for the assimilation of new information into the existing conceptual scheme with information that requires an extension and re-organization of the scheme (Taba and Elzey, 1964:528)."

The teachers, whose lessons were taped, received special training in the analysis of thought processes and in devising effective teaching strategies for their development. The social studies curriculum, followed by the 20 elementary classroom teachers, ". . . centered on a series of basic ideas and was organized for inductive discovery and development of these ideas (Taba and Elzey, 1964:525)." The curriculum outline was a ". . . planned sequence of learning experiences designed to enhance the development of generalizations and their application to solving problems (Taba and Elzey, 1964:525)."

Records of classroom transactions were made by taping four discussions in each of 20 classrooms. The taping was done at a point in the curriculum outline when a specified cognitive

task was to occur and was known to relate directly to the study. The task for the first taping was enumeration, grouping, and classification. The second involved interpreting data from a film and formulating inferences. The third related to student reports of research in which the focus was comparison and contrast of data and expression of generalizations. The final taping, at the end of the year, involved application of previously learned knowledge to predicting consequences from described hypothetical conditions (Taba and Elzey, 1964:528-529). Multidimensional analysis of the taped classroom records was conducted ". . . in terms of what the teacher does, of what the responses of the student are, and of the product of the interaction (Taba and Elzey, 1964:528)."

The "thought unit" was the unit of analysis applied to the taped classroom transactions for describing thought processes. Thought unit was defined as ". . . a remark or series of remarks expressing a more or less complete idea, serving a specified function, and classifiable according to level of thought (Taba and Elzey, 1964:529)."

The verbal transactions were scored by three different ratings to enable simultaneous description of teaching acts and the level of thinking of students. The ratings were:

> Designation . . . describes the source of the thought unit; Function describes how a thought unit functions in the context of discussion; Levels of Thought describes both the student's and the teacher's verbal behavior by specifying the logical quality and the level of thought expressed (Taba and Elzey, 1964:529).

In addition, another rating scheme was applied to each of the three cognitive tasks. The scheme, representing the hierarchical

levels of thought according to their levels of abstraction and complexity, was applied to the cognitive tasks of concept formation, making inferences and induction of generalizations from specific data, and application of generalizations to explain new phenomena and to predict events and conditions (Taba and Elzey, 1964:529). The combined ratings provided a scheme that represented ". . . the developmental sequence for each cognitive task (Taba and Elzey, 1964:530)." In each category one further set of distinctions was made between the irrelevant, the disconnected, and the related information or content (Taba and Elzey, 1964:530).

The multiple coding scheme made possible depiction of the flow of classroom discourse through the use of flow charts. Sequences of transaction between teacher and children, changes in level of thought during discussion, and the effect of these strategies upon the level and direction of thought were suggested as possible for inclusion on the flow charts. Taba and Elzey (1964:532) pointed out the potential yield of such a multidimensional system: (1) identification of characteristic modes and levels of thought of particular pupils, (2) an accounting of frequencies of various thought patterns which prevail and the discrepancies between what the teacher seeks and how the children respond, and (3) the various strategies which teachers may employ and their consequences.

Taba and Elzey (1964:533) stated, in a preliminary analysis of the typescripts, that:

> . . . the enormous influence of teacher behavior on the thinking of students . . . [was revealed] in a

> variety of ways: . . . nature of the questions asked, what the teacher gives the students and seeks from them, the timing of these acts in the total sequence, which ideas are picked up for elaboration and which are passed over, points at which approval and disapproval are given, . . . the sequence of mental operations called for and the appropriateness of this sequence to developing productive thought models.

Webb. Webb (1970:23), also interested in the hierarchy of thought processes, developed an observational system ". . . designed to measure the cognitive behavior of both students and teachers in a classroom." Her study differed from that of Taba and Elzey in terms of the theoretical base. Bloom's (1956) Taxonomy of Educational Objectives, The Classification of Educational Goals, Handbook I: Cognitive Domain, with items organized in an hierarchical order, provided the base for Webb's (1970) category system. Webb (1970) referred to her system as the Taxonomy of Cognitive Behavior.

Webb (1970:24) expressed concern that the acquisition of knowledge has dominated education so that teachers have emphasized acquiring information and have neglected the cognitive processes pertaining to application and synthesis of knowledge. In much the same vein of thought, Taba and Elzey (1964:525) earlier stated:

> A rather frequent criterion of current teaching-learning procedures is that they tend to cultivate passive mastery instead of an active discovery of ideas - a tendency to follow 'recipes' in solving problems instead of analyzing them and searching for generalizations with which to organize the needed facts and to plan an attack on them.

The theoretical base for Webb's (1970) Taxonomy of Cognitive Behavior had two distinct concepts. First, ". . .

that the learner must acquire knowledge (the lowest level) and be able to comprehend it (the second and third levels) before he can deal with it in some manner (represented by upper levels) (Webb, 1970:26)." Second, ". . . simplicity and complexity are not synonymous with concreteness and abstractness (Webb, 1970:26)." The latter negated the assumption that ". . . intellectual abilities grow increasingly complex in nature . . . /thus/ the upper levels are only present in the cognitive behavior of the mature individual (Webb, 1970:26)."

Two criteria guided the design of Webb's (1970) category system. First, its theoretical base had to be represented as well as inclusive of the kinds of cognitive activities which occur in classrooms, and secondly, it had to be applicable from nursery school through higher education with no limitation on subject matter areas (Webb, 1970:26).

The seven levels of cognitive behavior used by Webb were knowledge, translation, interpretation, application, analysis, synthesis, and evaluation. Webb's levels two (translation) and three (interpretation) were equal to Bloom's (1956) second level (comprehension). A total of 54 behaviors were represented by Webb, distributed so one-third of the items were at the knowledge level, the base upon which successive cognitive behaviors are built (Webb, 1970:25).

Tweive observers, trained for 10 to 12 hours in the use of the instrument, recorded behavior as it occurred by checking each item of teacher and student behavior in the appropriate

column as it happened. There were five separate six minute recording periods in each 30 minute observation. Webb used a sign system for categorizing possible multiple behaviors in a short time span. Webb felt that the advantages of the sign system eliminated the need for the observer to make a judgment as to a single classification into which behavior should be recorded, and therefore strengthened the system (Webb, 1970:28). If a behavior needed more than one item to describe it, the observer checked all the items involved. Behaviors were ignored that did not fit into the framework of the instrument. A record of the cognitive activities which had taken place in one 30 minute period was made by totalling the tallies recorded for pupil and teacher behavior.

Results were reported in terms of the general level of cognitive activity for the teacher and the students. The item representing the midpoint number, or the median, was that point above and below which 50 per cent of all the observations had occurred. This was determined by totalling individual column scores into a grand total score. The grand total was divided by two and rounded off to the nearest whole number, yielding the midpoint number. Starting at the top of the first page in the total column, scores were added cumulatively until the midpoint number was reached. The item opposite this number then was said to be representative of the level of cognitive activity shown by the teacher or students respectively for one 30 minute observation period (Webb, 1970:32-33).

The instrument was field tested simultaneously and in conjunction with two other observation instruments, the

Reciprocal Category System and the Teacher Practices Observation Record (Webb, 1970:27). Factor analysis was done of the three records made of the same classroom situations during each observation. The results indicated that ". . . the Taxonomy of Cognitive Behavior did measure aspects of classroom behavior which were not tapped by the other systems (Webb, 1970:27)." It was concluded that these data helped to establish tentative construct validity of the instrument.

Webb (1970:27) tested the ". . . comprehensiveness of the instrument in measuring behavior at varying developmental stages of children." The results revealed high level thinking at all grade levels, including very young children. In addition, the Taxonomy of Cognitive Behavior ". . . was found usable in subject areas dealing with the major disciplines and non-academic areas as well (Webb, 1970:27)."

Observer validity was acceptable in terms of agreement with criterion scores developed by the trainer. Webb (1970:28) ". . . found consistency or within-observer coefficients ranging from .80 - .85 for a selected group of observers."

Barrett. Barrett (1969) was interested in analysis of teacher behavior but in a different setting from those previously reviewed. It was her purpose to develop a category system that systematically described teacher-student behavior in physical education lessons in primary grades implementing the concept of movement education (Barrett, 1969:9).

Barrett (1969:88) accepted as a theoretical base for the construction of her category system the concept of instructional interaction as perceived by Hawthorne (1968). Hawthorne (1968) identified a set of components that were considered common to both pre-instructional curriculum decisions and teacher verbal interaction. He stated that the oral behaviors of student and teacher in verbal instructional interaction were funnelled through the organizing centers that involved processes and content common to both the pre-instructional curriculum decisions and verbal instructional interaction (Barrett, 1969:89). It was upon this view of instructional interaction that Barrett identified components of a physical education lesson which in turn became the basis for her final category system.

The category system had four major dimensions: Movement tasks, Content, Guidance, and Student movement responses. The categories within each dimension were derived from the components of a physical education lesson implementing the concept of movement education, and which described the teacher's verbal behavior and the student's movement responses in this specialized context. The components of the physical education lesson were identified as movement task(s), student response(s), content, guidance, teacher, and learner (Barrett, 1969:101-103).

Movement Tasks, the focus of Dimension One, included categories for eight types of movement tasks: command, guided discovery, selected response, specific limitation, implied variety, specific limitation: continuous variety, non-specific limitation:

implied variety, non-specific limitation: continuous variety, and free exploration (Barrett, 1969:103). Dimension Two, Content, had three major aspects identified: qualities of movement, body action, and spatial movement. Overall 14 categories comprised the Content Dimension: time, force, space, flow, body parts, body shape, relationship of body parts, locomotor, non-locomotor, manipulative, personal space, general space, direction, and level. One additional category, "unrelated," was provided in the event that content could not be identified as being represented by any one of the 14 preceding categories. The emphasis of this dimension was to analyze movement in terms of its components rather than specific sports or dance skills. These content categories had as their base the work of Laban (Barrett, 1969:108-110). Guidance, the central concern of Dimension Three, was concerned only with the teacher's verbal behaviors. Barrett (1969:116) accepted the assumption that verbal behavior is the type used most often in the physical education context under investigation in the study, and it is representative of what is considered as guidance or teaching cues by both writers and active teachers. Barrett (1969:117-120) established three broad areas of guidance: when it was given, to whom, and the nature of the behaviors themselves. In relation to these three areas, five categories were developed: focusing, questioning, accepting, rejecting, organizing and unrelated. Selection of these five categories in Dimension Three was related to Flanders' concept of teacher indirect influence encouraging the opportunity for the student to participate (Barrett, 1969:67).

Student Response, the focus of Dimension Four, was related to the ability of a student to become self-disciplined (Barrett, 1969:121). Deelman's scale (1966) stemming from the first two levels of the Taxonomy of Educational Objectives, The Classification of Educational Goals. Handbook II: The Affective Domain, was the theoretical base for identification and definition of the student response categories of Barrett's (1969:123) study. Categories were: unaware of the situation, aware of the situation, responds to the situation inappropriately, responds to the situation appropriately, and responds to situation appropriately and willingly (Barrett, 1969:121-122).

Five observers, trained in the use of the category system, coded 12 videotaped physical education lessons taught by four teachers who were currently teaching grades 1-3 and implementing the concept of movement education. Individual students in each class were selected randomly as subjects for observation in order to facilitate the recording of student responses (Barrett, 1969: 138-147).

In order to indicate whether the category system was an objective, reliable, and valid measurement of teacher-student behavior evident in the special context of the study, Barrett (1969:148-153) tested interjudge agreement, intrajudge agreement, content, and construct validity. Interjudge agreement was estimated by determining percentages of agreement between paired observers. The results were organized and studied according to dimension as well as individual categories. Intrajudge agreement

was estimated to determine to what extent each observer could agree with what he had observed at an earlier time. Percentages of agreement between the first and second observation of the same six video tapes were estimated for all five observers. Barrett accepted a percentage of agreement of 80 per cent or higher as acceptable for her study. Sixty-nine to 79 per cent agreement was considered as suggestive of a positive direction and as an indication that further refinement of the specific categories, recording technique, and training observers would improve the agreement. The results showed that 64 per cent of all possible percentages of agreement among pairings were in the 60 - 79 per cent range, with 28 per cent between 80 per cent or above. In general, Barrett attributed the achieved percentage of agreement scores to the overall complexity of the category system (Barrett, 1969:148-191). Construct validity was studied by testing the use of categories. The total number of entries per category for each dimension and the per cent of the total number of entries in each dimension was computed. Barrett concluded that the category system developed for her study did not have unconditional construct validity, though ". . . the potentiality of construct validity seems tenable (Barrett, 1969:188)."

Content validity was estimated to check the representativeness and comprehensiveness of the categories defined by the category system. Content validity was judged by a panel of experts, selected because of their leading role in helping to promote a better understanding of the meaning of the concept of movement education in elementary physical education programs. Barrett (1969:189) accepted

the reaction of the four experts as meaningful and stated that the category system ". . . appeared to have content validity. Barrett (1969:197) concluded that ". . . the category system shows promise for systematically describing the teacher-student behavior in primary physical education lessons implementing the concept of movement education."

SUMMARY

Chapter II reviewed the literature in choreography and teacher-student behavior pertinent to the development of the category system developed for this study.

The broad concepts that underlie choreography and the specific movement elements common to a choreographic piece were presented in the first section. Teacher behavior research was reviewed in three ways: (1) representative studies in teacher effectiveness, (2) representative studies in teacher description, (3) selected recent research pertinent to this study.

Chapter III presents the rationale underlying the category system, the category system, and the recording technique.

CHAPTER III

THE CATEGORY SYSTEM

Chapter III presents the Category System that describes teacher-student verbal and nonverbal interaction in the teaching of choreography. The multidimensional system includes The Cognitive Domain, The Affective Domain, The Kinetic-Kinesthetic Domain, and The Technical division. Each Domain has as its focus a particular aspect of verbal and nonverbal interaction in the teaching of choreography. All of the Domains are characterized by application of common organizing principles that create interrelationships among the Domains. The Technical division functions as an aid in coding observations.

The rationale underlying the development of the category system is presented first. The category system itself follows, succeeded by the recording technique developed for this system.

RATIONALE

Two major ideas have had influence on the development of the category system: (1) the theoretical considerations of the components of the choreographic process, and (2) the unity of man as it relates to dance.

Theoretical Considerations of the Components of the Choreographic Process

Evident in the literature reviewed in Chapter II, there is agreement among theorists as to the concepts that underlie choreography. These concepts are: (1) man, the creator-choreographer, functions as an integrated being blending his mental, physical, and emotional stimuli, (2) movement-motion is the medium or material of dance, and (3) dance is both literal and nonliteral as an expressive art form. The two concepts that have special importance in the selection and arrangement of the raw materials of dance will be presented first: movement-motion as the medium of dance, and dance as a literal or nonliteral expressive form.

Reviewed briefly, the common elements of dance, or the raw materials, were determined earlier as Time, Space, and Dynamics, with movement-motion as the common denominator. Movement, by its very nature, occurs in Space. Varying degrees of energy or force, termed Dynamics, are applied and produce the nuances of motion. Each motion, infused dynamically, takes place in Time as well as in Space. The selection of the specific way for combining the multiple Time-Space-Dynamics variations of movement-motion is dependent upon the purpose or idea to be represented.

Regardless of the theoretical position of the choreographer as to the literal or nonliteral function of dance, the basic materials used to create a dance remain the same. It is assumed that what differs is the perception of the idea for the dance, and the degree to which the materials of dance will be harnessed to

give concrete representation to that idea. As indicated earlier, ideas about the function of dance reflecting the traditional aesthetic view have been categorized generally as literal dance. The less widely accepted and less traditional nonliteral view stresses the value of dance for its very existence, not for its imitative or representative aspects (Turner, 1971). Although these two categorizations appear bipolar in purpose, any choreographer is undeniably bound to the use of the same materials in fashioning a dance.

Stated in another way, the student of choreography shapes his dance material in relation to his overall view of the purpose of his dance. Lockhart and Pease (1973:83) gave support to this assumption in their statement:

> Elements of movement are given form when the thematic material which is pertinent to the idea to be expressed is treated in an orderly sequence and manipulated with skill.

Lockhart and Pease (1973:63) were of the opinion that "even so-called free forms will reveal an ordering of the materials, for no good composition can be devoid of shape of some sort or another." Hawkins, (1964:88) explaining the relationship between the ordering or organization of materials and the intent, stated:

> Form is not a thing in itself, but instead it is a symbol that always points to something beyond itself. It is the means of revealing the intent of the dance.

Form, in Hawkins' view (1964:87-88), is organic in that it is more than an arrangement of materials. Form comes from the internal structures of the dance, giving it order and wholeness as the form relates to the function of the dance.

The choreographic process. Shaping the dance can be conceived broadly as the choreographic process itself. The process is more than a procedure through which raw material is passed. It is the synthesis of intellect, emotion, attitude, value, kinetic and kinesthetic responses through articulation of movement. Smith (1968:9) referred to this meshing as the free flow of the rational and the intuitive as one gains fuller possession and utility of the body and of the uniqueness of total self. Craftsmanship as well as artistic inventiveness is revealed in the way in which the choreographer processes and synthesizes his movement ideas in terms of Time, Space, and Dynamics.

The choreographic process has as its goal clarity and simplicity of expression. The process assumes a cyclical nature as each function within it leads toward the completed piece, its subsequent evaluation, and revision. Improvisation techniques are used to generate movement material. Selection, manipulation, unification, and refinement processes are applied to the raw movement material. The completed piece of choreography, performed in a formal or informal setting, is open for external evaluation or repeated self evaluation by the choreographer.

Agreement about the process functions in choreography by Humphrey (1959), Horst (1960, 1961), Hawkins (1964), Lippincott (1969), and Lockhart and Pease (1973) has served as the base for the formulation and organization of that portion of the category system oriented to the process of choreography, The Kinetic-kinesthetic Domain.

Process functions. Ten process functions in choreography have been identified: Replication, Imitation, Manipulation, Experimentation, Improvisation, Composition, Evaluation, Rework, Refinement, and Performance. These process functions are operable in pursuit of the choreographic goal, a dance piece that has unity, clarity, and simplicity.

The process of repeating a dance or movement sequence has been determined as Replication and Imitation in this study. Exact repetition of a brief phrase, without error, has been specified as Replication. The dancer simply memorizes the phrase and repeats it.

Lockhart and Pease (1973) have pointed out the value of replicating movement phrases, especially for the beginning student. Precomposed movement phrases can be used to illustrate to the student ways of extending a movement and developing a phrase. Learning and repeating selected phrases, combined with comprehension of their construction, help the student sense the difference between "exercising" and "dancing" (Lockhart and Pease, 1973:61).

The fear of overuse of imitative work was expressed by Lockhart and Pease (1973). Limited use of imitation kinds of activity was recommended, with the additional caution that "students should not be denied the right to develop their own creative abilities (Lockhart and Pease, 1973:62)." Hawkins (1964:18) concurred that dance should be experienced not as an imitative activity but as an expressive activity. She recognized

the anxiety of the inexperienced dancer and the strong need to conform. Hawkins (1964:18) recommended that the hesitation and insecurity of the beginning choreography student be eased by experiences that guide a student so he overcomes his fears. One means of helping the beginning student was through replication of movement phrases. This may help to move the student to other levels of the process of choreography sooner, providing a sense of accomplishment.

Imitation was the term selected to apply to incomplete or inaccurate replication of movement materials. The inaccuracy may be shown by lack of continuity in flow of movement, lack of clarity in rhythmic phrasing, and other details that contribute to a sketchy reproduction of a given amount of movement.

Manipulation is the purposeful rearrangement of a given movement sequence so that portions of the original material are still observable and identifiable. The function of manipulation in dance was derived from its use in music composition where small amounts of thematic music material were extended, reduced, and changed in many ways (Horst, 1961:23-27). Manipulation serves as a form of discipline in terms of clarity, simplicity, and unity.

Hawkins (1964:88) stressed that the end goal of unity was achieved only after selecting, limiting, and manipulating movement. Economy of movement, as well as simplicity, were inherent in the unity of dance (Hawkins, 1964). Horst (1960, 1961) was an advocate of economical use of movement in his approaches to both theme and manipulation and theme and variation. Lippincott (1969),

writing about Horst's ideas, indicated his strong bias toward the use of manipulation tools in developing a dance and his equally strong partiality toward the limited use of improvisation in working with dance material. Improvisation was a tool to be used to generate new movement, and that alone. Once the movement was selected, nothing further in form or style was to be improvised (Lippincott, 1969:6). Humphrey (1959:159), by implication, held views similar to that of Hawkins (1964) and Horst (1960, 1961) related to simplicity, clarity, economy of movement, and the use of manipulation when she stated:

> All dances are too long.
> A good ending is forty per cent of the dance.
> Don't be a slave to, or a mutilator of, the music.
> Don't intellectualize; motivate movement.

In her comments about the length of a dance, Humphrey (1959:162) seemed to summarize all her earlier remarks:

> There is one other remedy besides cutting for the overlong dance, and that is more material, more intensity, more invention; . . . .

Based on the general tenor of Humphrey's (1959) book, "more material, more intensity, more invention" is interpreted to support the use of manipulation and improvisation in the process of choreography.

Lockhart and Pease (1973:55), in a more current view, stated:

> Because today we are placing greater importance upon individuality and encouraging a freedom of self-expression, there is more emphasis upon improvisation in the teaching of modern dance than here-to-fore.

Viewed in perspective, improvisation had at least three functions for Lockhart and Pease (1973:55). First, spontaneity, ". . . the creation of something unrestrictedly new and original as a thing of the moment (1973:55)." Second, improvisation opens the doors of creativity enabling the choreographer to use the materials of dance in his own way. Finally, improvisation requires ". . . the willingness to be involved with the moment, to in a sense lose one's self, at least to lose the awareness of self (Lockhart and Pease, 1973:56)."

Experimentation has been associated with beginning phases of improvisation. The terms explore and experiment have been used frequently in the dance literature, with reference to finding new ways to move, sensing new uses of the body in relation to specific ideas, and in making kinetic responses to stated problems that do not identify a specific movement base. Lockhart and Pease (1973), Turner (1971), Hayes (1964), and Hawkins (1964) are among the authors who refer to exploration and experimentation respectively as a beginning aspect or prelude to the more complex improvisation problems. A problem for experimentation or exploration may be "bite size" in complexity in comparison with some challenges posed for improvisation.

Hawkins (1964:85-88) differentiated between the processes of improvising and composing. While improvising is characterized by spontaneity, composing is marked by selection, integration, manipulation, and refinement factors tending to remove it from the realm of improvisation. The function of improvising is as a

means to generate new movement material. The function of composing is to create a dance.

Turner (1971) has expressed a similar view about the function of improvisation and implied that choreography entails selection and refinement of movement. She indicated the difference by stating:

> Besides developing the essential spontaneity, improvisation provides rich and varied movement experiences without the need for the time-consuming process of designing and polishing movements required by choreography (Turner, 1971:32).

Reiteration is made here of the relationship between the elements of dance, Time, Space, and Dynamics, and the process functions of choreography identified as Replication, Imitation, Manipulation, Improvisation, Composition, Evaluation, Rework and Refine, and Performance. At each point in the choreographic process the three elements are the ingredients with which the choreographer works. Figure 1, page 66, shows the relationship, cyclical in nature, of the process functions of choreography and the use of the elements of dance, Time, Space, and Dynamics.

The process functions appear on the outer circle. Two directional arrows indicate the continuous interplay between the process functions. When evaluation indicates there is monotony in the movement, experimentation and improvisation may be needed to generate new material. Manipulation may be applied to that new material to try to alleviate the monotony. Recognition that the monotony rests in weak dynamic range may lead to particular focus on that element during improvisation and manipulation.

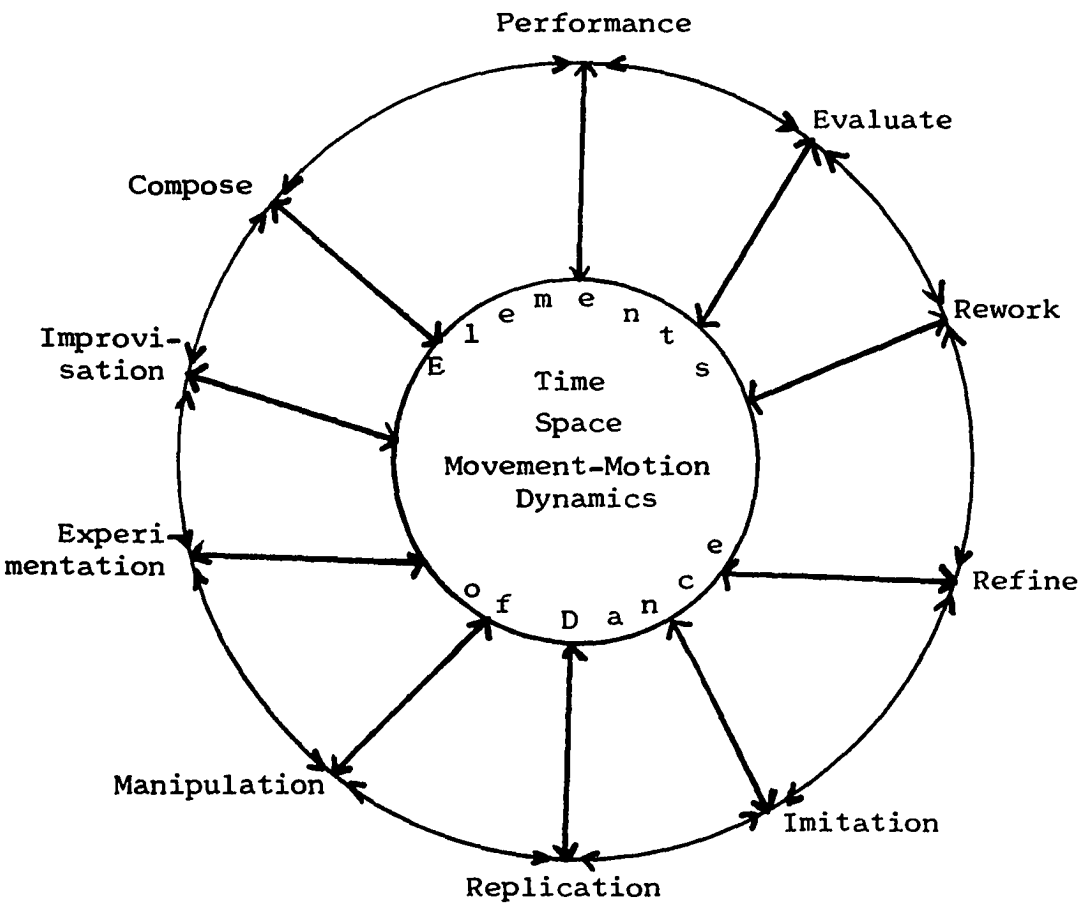

Figure 1

Relationship Between Process Functions and Elements of Dance

Although a single element may be stressed in a given choreographic problem, each element is fused to the other two so that all the elements are consistently present. The degree to which one element dominates a dance phrase, or a completed work, is a function of the intent of the choreographer.

The elements of dance have been placed in the hub of the wheel with spokes radiating toward the process functions. Each spoke contains all three elements, as well as movement-motion as the common denominator, and provides the raw material for each process function.

The relationship of the process functions of choreography and the elements of dance was presented as the working base for the Kinetic-kinesthetic Domain in the Category System.

The Unity of Man

The discussion of the unity of man has been divided into three parts. The first presents a discussion of the multi-dimensional function of the creator-choreographer. The function of The Cognitive, Affective, and Kinetic-kinesthetic Domains in choreography class is the focus of the second section. The third portion is concerned with the relationships among Domains.

These three ideas serve as a theoretical base for the multidimensional view of events in a choreography class. Application of these ideas was made in the overall organization of the category system developed for this study.

Multidimensional function: the creator-choreographer. The unity of man as a thinking, feeling, and moving being has been

noted earlier when reviewing the dance literature. The multidimensional functions, which man performs as the creator-choreographer, were identified by Rowe (1969:45) as ". . . feeling-action-emotion-shape-spacing, timing, positioning-design-projection. . . ." Rowe was referring to the choreographic process while H'Doubler (1957) presented a more general identification of the unity of man within the field of dance. In 1957, H'Doubler wrote of the need to acknowledge the unity of man in teaching dance. She expressed the view of the integrated, yet multidimensional man in this way:

> If we accept the belief in the organic wholeness of man, it is evident that the development of his energies must be interdependent. Our emotions and desires need intelligent selection and guidance, and to be carried to their fullest expression they demand skillful execution (H'Doubler, 1947:63).

Turner (1971:27) stated that the human body ". . . is endowed with capacities to think, sense, balance, coordinate, and time." In her discussion of the physical and psychological components of the structure of a dance, Turner (1971:28-30) provided extensive lists of movement activities, mental activities, and emotional states. A few have been selected representative of each category: (1) movement- axial, locomotor, qualities, and shapes, (2) mental- aesthetic judgment, association, evaluation, memory, selection, and problem-solving, and (3) emotional- angry, compulsive, flirtatious, joyous, pensive, and sensuous.

These brief references each have a different focal point for the discussion of the unity of man. Guilford's (1959) cubical

model, Structure of Intellect, was selected as a base depicting the unity of man functioning as the creator-choreographer. Further, Guilford's model has served as a base for the selection of the specific Domains within the category system developed for this study.

Guilford (1959:2) felt it imperative that investigation of the nature of human intelligence, ". . . intellectual abilities and, more particularly our creative abilities . . ." be undertaken. He summarized the outcome of his work as:

> The development of a unified theory of human intellect, which organizes the known, unique or primary intellectual abilities into a single system called 'the structure of intellect' (1959:2).

Three intellectual factors were classified: process, content, and operations. The basis for process classification was according to the basic kind of process or operation performed. Included in this classification were cognition, memory, convergent thinking, divergent thinking, and evaluation (1959:2). The basis for content classification was the kind of material or content involved. Four categories were identified within the content factor: (1) figural, (2) symbolic, (3) semantic, and (4) behavioral. Product, the third major intellectual factor, had as its base the result of the application of certain operations to certain content, and six kinds of products were determined: (1) unit, (2) classes, (3) relations, (4) systems, (5) transformations, and (6) implications (Guilford, 1959:2-3).

Guilford (1959:4) analyzed the single solid model to show that:

> Each cell on the model calls for a certain kind of ability that can be described in terms of operation, content, and product, for each cell is at the intersection of a unique combination of kinds of operations, content, and product.

The concept that the nature of the product of thinking can be identified by knowing the specific classification of operations and content to be applied was of importance for the current study. For example, in a cognitive operation (knowing) applied to figural content (concrete material such as perceived through the senses), the product in terms of unit might be tested as knowing of auditory forms by means of identification of the specific rhythm or melody. In the context of the present study in dance, this has been broadly interpreted to be a simple operation, dealing with reasonably concrete content, resulting in a product that was simple. The question might be raised as to how an operation-content-product of greater complexity can be explained through use of the Structure of Intellect model. Definitions of operation, content, and product are necessary before an example can be given and analyzed.

The following terms have been defined by Guilford (1959):

> Evaluative abilities . . . evaluation involves reaching decisions as to the accuracy, goodness, suitability, or workability of information . . . some criterion or standard of judgment is involved (1959:11). Semantic content . . . is in the form of verbal meanings or ideas. . . (1959:3). Implications product . . . going beyond information given, . . . individual foresees certain consequences . . . 'a sensitivity to problems' (1959:6, 13).

An example for such an operations-content-product might be stated from the teacher's view requesting an evaluation of space as an abstract element, after observing a videotaped dance which was

performed in the round. The student has been asked to perform an evaluative operation (evaluate) relative to semantic content (space, as an abstract element in a dance performed in the round). In order to draw implications, the product, application of knowledge is required relative to space as it is used in the round. The product will be apparent in comments citing the various aspects that are deficient or good.

The complexity of the integrated function of man was an idea reinforced by Guilford's discussion centering around the different products that result from different operations applied to different content. Identification of specific factors within the content classification provided the stimulus for ways of classifying Domains and categories in the present study. The identification of operations factors helped to justify the use of hierarchical sequencing in each Domain.

Guilford identified the content as figural, symbolic, semantic, or behavioral. He defined and explained each in this way:

> Figural content is concrete material such as is perceived through the senses. It does not represent anything except itself. Visual material has properties such as size, form, color, location, or texture. Things we hear or feel provide other examples of figural material. Symbolic content is composed of letters, digits, and other conventional signs, usually arranged in general systems, such as the alphabet or the number system. Semantic content is in the form of verbal meanings of ideas, for which no examples are necessary (Guilford, 1959:3). Behavioral . . . which may be roughly described as 'social intelligence' . . . . Understanding the behavior of others and of ourselves is largely nonverbal in character (Guilford, 1959:14).

Each type of content, defined by Guilford (1959), was determined to fall within specific Domains in the category system developed for this study. Figural content was deemed to fall primarily within The Kinetic-kinesthetic Domain in which the teaching and learning of dance is central. The basis for this placement was in Guilford's reference to the perception through the senses of form, location, and texture. The individual creating a dance uses sensory perception in all phases of the choreographic process. Symbolic content, as defined by Guilford, had no direct application to the current category system except as "conventional signs" can be interpreted as specific dance postures that carry symbolic meaning. The twisted or curved torso commonly associated with grief or pain is an example of a "conventional sign" in dance. Symbolic content was determined as primarily appropriate to The Cognitive and Kinetic-kinesthetic Domains. Semantic content had application in The Cognitive, Affective, and Kinetic-kinesthetic Domains. Its inclusion in The Cognitive Domain was due to knowledge, facts, and ideas being the root of that Domain. Semantic content was expanded to incorporate attitudes and values about the ideas when included in The Affective Domain. The application of semantic content to The Kinetic-kinesthetic Domain is direct in terms of ideas being the stimulus for the choreographic process. Behavioral content, nonverbal in nature, lies within The Affective and Kinetic-kinesthetic Domains. As such, nonverbal understanding contributes to knowledge and facts, and it may be said to relate to The Cognitive Domain also.

The tri-dimensional representation in Guilford's content classification gave additional support to structuring a category system in dance to include knowledges and ideas (behavioral, symbolic), attitudes and values (behavioral, semantic), and the choreographic process (figural, symbolic, semantic, behavioral). Simultaneously, this supported the concept of the unity of man, the creator-choreographer.

Function of Cognitive, Affective, and Kinetic-kinesthetic Domains in choreography class. The three Domains selected as parameters for the category system for the choreographic process developed for this study have been presented in the previous discussion related to the content dimension of Guilford's (1959) model. Support for the selection of The Cognitive, Affective, and Kinetic-kinesthetic Domains for the system has been gleaned from the Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook I: Cognitive Domain (Bloom, 1956), the Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook II: Affective Domain (Krathwohl, 1964), and the components of the choreographic process. The categories within each Domain will be discussed when the category system is presented in its entirety.

A study of the literature revealed agreement that man functions in several ways simultaneously when engaged in the choreographic process. Phenix (1964:66) reiterated the idea of the unity of the human organism when he stated: "The fundamental concept of the arts of movement is the organic unity of the person."

He rejected the duality of the mind and body and emphasized cognitive, affective, and motor responses as inseparable. He stated his position in this way: "The union of thought, feeling, sense and act is the particular aim of the arts of movement. . . (Phenix, 1964:166)."

Thinking, sensing, feeling, and acting, identified consistently in the literature reviewed related to the concept of the unity of man, were considered as fundamental aspects of a system describing teacher-student behavior in a choreography class. The Cognitive Domain was designated to encompass thinking, with particular focus on giving and receiving information with specific interest in the development of factual content from simple to complex levels of operation (Bloom, 1956:7, 18). The Affective Domain has been identified as that which has as its primary focus the attitudes, values, and feelings held by an individual (Krathwohl, 1964:7). The Kinetic-kinesthetic Domain was specified to include behaviors with primary focus on the body in motion in a dance setting, particularly representative of the teaching of choreography. The use of the more familiar term "psychomotor" was rejected as the label for this Domain for three reasons. First, as defined by Krathwohl (1964), the term was too broad for a specified dimension of motor skill such as dance. He stated that the psychomotor domain had ". . . objectives which emphasize some muscular or motor skill, some manipulation of material and objects, or some act which requires a neuromuscular coordination (Krathwohl, 1964:7). In contrast to the broad interpretation above, Harrow's

(1972) application of the term was limited to the movement of children. More specifically, Harrow (1972:32) defined the term as inclusive of ". . . observable voluntary action or action patterms performed by the learner and designated by the educator as being an essential portion of the educational goal of his particular curriculum." Finally, Jewett (1971) has restricted her work to the motor domain and has not attempted to identify the combined "psycho-motor" facets of human motion. In summary, in any of the interpretations cited, the special qualities of dance motion which are important in choreography were not clearly identified. These two qualities, apparent from the literature reviewed, were "kinetic" and "kinesthetic."

Bloom (1956), Krathwohl (1964), and Harrow (1972) were in agreement as to the interdependence of the cognitive, affective, and psychomotor domains. Most applicable to the rationale for this study is a portion of the rationale Harrow (1972) presented for the Taxonomy of the Psychomotor Domain. She stated:

> Movement is the key to life and exists in all areas of life. When man performs purposeful movement he is coordinating the cognitive, the psychomotor, and the affective domains. Internally, movement is continuously occurring and externally man's movement is modified by past learnings, environmental surroundings and the situation at hand (Harrow, 1972:6).

Given the acceptance of the idea that all behavior incorporates movement of some type, internal or external (Harrow, 1972:10), the problem of isolating behaviors unique to each Domain becomes evident. Krathwohl (1964:45-48) took the view that each domain can be treated arbitrarily as independent of the other, but the

ways in which the cognitive and affective domains are related needs analysis. In discussing the potential relatedness Krathwohl (1964:48) mentioned the practice of stating educational goals specifically in one domain, yet suggested that a cognitive behavior has an affective component accompanying it. He summarized that identification of the affective domain ". . . is useful in emphasizing the fact that affective components exist and in analyzing their nature (Krathwohl, 1964:49)."

Bloom (1956:6-7) indicated the necessity for inclusion of the cognitive, the affective, and the psychomotor domains in a taxonomy to aid in classification and description of student behavior. Three main ideas have been presented: (1) the principle of all-inclusiveness was presented by Bloom (1956:2), (2) the problem of exclusive identification of each behavior was emphasized by Harrow (1972) and Krathwohl (1964), and (3) the relatedness among domains was affirmed by all three authors.

The identification of the Domains for this study as separate, yet interrelated entities, was based on the work of Bloom (1956), Krathwohl (1964), Jewett (1971), and Harrow (1972). The principle of separation has been retained not only in the identification of categories specific to each Domain, but also in the system developed for recording the behaviors. Each category met the criteria of being mutually exclusive of other behaviors and also, when combined with all categories in the Domain, all-inclusive of behaviors specific to the Domain. The recording system requires that as many facets as possible of an observed

and audible behavior are to be recorded in the appropriate Domains. The identification of simultaneous behaviors in different Domains acknowledges the probable interrelatedness of the behaviors.

Relationships among Domains. The importance of the relationships among Domains is more clearly seen when the internal structure of the category system is understood. In reviewing the literature, various organizing principles were used in the development of category systems and taxonomies. Three were of primary help in the development of this system: (1) simple to complex, (2) concrete to abstract, and (3) conscious to unconscious.

1. Hierarchical organization: simple to complex continuum. Common to the taxonomies proposed by Bloom (1956), Krathwohl (1964), Jewett (1971), and Harrow (1972) was the use of hierarchical ordering. Acceptance of two ideas is basic to the application of hierarchical organization for a simple to complex continuum: Hierarchical organization provides clues about the relationships between categories; and a simple to complex scheme pre-supposes that simple behaviors are integrated with other simple behaviors to form a more complex behavior. The implication of the second idea is that the most simple behaviors become the lowest level in a classifying scheme and the more complex behaviors range upward in level.

Bloom (1956:18) arranged the cognitive behaviors hierarchically on a continuum from simple to complex. The six major classes for the cognitive domain were listed hierarchically as knowledge, comprehension, application, analysis, synthesis, and

evaluation. In addition, Bloom (1956) applied a scale of awareness or consciousness to the classification of cognitive behaviors. He stated that ". . . the behaviors in the cognitive domain are largely characterized by a rather high degree of consciousness on the part of the individual exhibiting the behaviors. . . (Bloom, 1956:19)." Bloom (1956), contrasting the level of awareness in the affective domain with that of the cognitive domain, summarized the level of awareness as low in the affective domain. In relation to level of awareness in more complex cognitive behaviors, Bloom (1956:19) stated that ". . . it appears that as the behaviors become more complex, the individual is more aware of their existence." Bloom (1956:19), presenting the opinion of the writers of the Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook I: Cognitive Domain, projected the corresponding lift in level of awareness with level of complex behavior to apply to other domains as well. Bloom (1956:20) reported that some research on thought processes in problem solving suggested the idea of more awareness on the part of the individual as the complexity of the problem increased.

Studies by Gallagher and Aschner (1963), Taba and Elzey (1964), and Webb (1970) each supported the simple to complex hierarchical scheme used earlier by Bloom (1956). Gallagher and Aschner (1963) developed their categories representative of productive thinking based on the degree of manipulation, analysis and integration of ideas demanded. The simplest level of productive thinking was Cognitive-Memory corresponding in complexity

to the acts of recognition, selective recall, and rote memorization (Gallagher and Aschner, 1963:59). This appears comparable to level one, knowledge, in the work of Bloom (1956). Convergent Thinking, the second level of thinking in Gallagher and Aschner's (1963:61) study, represented thought processes that were analytic and integrative and existed in a closely structured framework. Application of this thought process to problem solving did not require "creative" or "invented" material. A degree of reasoning applied to the given or remembered data results in ". . . verbal evidence that he is using some rule, formula, or generalization (Gallagher and Aschner, 1963:61)." Convergent Thinking appears to correspond to application, level three, in Bloom's taxonomy. Divergent Thinking was characterized by Gallagher and Aschner (1963:63-64) as possessing qualities of spontaneity, initiative, originality, and flexibility in problem solving. Broad interpretation of synthesis, level five, in Bloom's taxonomy appears to include Divergent Thinking. Evaluative Thinking occurs in situations ". . . within which value-based judgments are requested or expressed (Gallagher and Aschner, 1963:62)." Level six, evaluation, the highest level in Bloom's (1956) classification scheme, parallels the thought processes defined as Evaluative Thinking in the Gallagher and Aschner system (1963). The relationship drawn between kinds of thinking and levels of cognition on the simple to complex continuum has bearing on the type of thinking that may be expected in both The Cognitive and Kinetic-kinesthetic Domains in the present study.

Webb (1970), interested in hierarchical levels of thought processes, used Bloom's (1956) Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook I: Cognitive Domain as the theoretical base for her work. This was considered pertinent to the present study in that Webb (1970) used her Taxonomy of Cognitive Behavior to identify both teacher and student behavior. This supported the use of Bloom's (1956) organizing scheme as well as his taxonomy, in the present category system identifying both teacher and student behavior.

Harrow (1972:19) arranged classification levels within the Taxonomy of the Psychomotor Domain hierarchically, along a continuum from the lowest level of observable psychomotor behavior to the highest level. Although Harrow's (1972:10) work was projected to have use as ". . . an essential framework for early childhood 'readiness' programs with their predominant movement orientation," it was suggested that application could be made within the broader framework of physical education programs. Explaining the broader application, Harrow (1972:10) felt the effectiveness of the Taxonomy was in its utilization to categorize ". . . the movement behaviors essential for optimal development of children in special education programs, fine arts education and vocational-technical education." Harrow's (1972) work reinforced the use of an hierarchical arrangement of psychomotor behaviors, the necessity for categorizing observable movement behaviors, and the need to attempt to apply an hierarchical scheme to the fine arts activities of which dance has been considered a part.

Application of the hierarchical organizing principle was important to the selection of observable behaviors in the present category system, particularly in the formulation of The Kinetic-kinesthetic Domain. For the present study it was determined that the base for the selection of the lowest level category in the Domain had to reflect the belief that creative and aesthetic movements were a part of the entering repertoire of the dance student in a choreography class. In Harrow's (1972:91) taxonomy creative and aesthetic movements were sub-categories of the highest category, Non-discursive, level six. Harrow (1972:93-94) defined aesthetic movement as ". . . skilled movements which are performed efficiently, creating for the viewer an image of effortless beautiful motion." Creative movements were described as ". . . those movements performed to communicate to the viewer some message or just to be observed as a dynamic design cut in space (Harrow, 1972:94)." The ability to utilize creative and aesthetic movements presupposes that the mover is highly skilled and possesses highly developed physical and perceptual abilities (Harrow, 1972:94). The complexity of behaviors selected for The Kinetic-kinesthetic Domain is apparent. Physical skills of movement are needed as well as perceptual abilities identified by Harrow (1972:57) as visual, kinesthetic, auditory and coordinated. When functioning efficiently, the perceptual abilities assist the mover in interpreting stimuli and enable him to make necessary adjustments to his environment. These perceptual abilities ". . . are essential to the development of the learner in the affective, the cognitive

and the psychomotor domains (Harrow, 1972:56)." Thus Harrow (1972:37-39) supported the idea that cognitive and affective behaviors exist within motor performance.

Jewett and others (1971) arranged the categories hierarchically within the proposed Taxonomy of Educational Objectives: Motor Domain. The categories were intended to provide a series of logical steps through which specific movement behaviors can be achieved. The logical progression from one movement behavior to the next became less clearly structured as an hierarchy when it was suggested ". . . that students at all levels should be able to achieve the highest level processes (creative movement) in some movement activities (Jewett, 1971, mimeo:15). The inherent complexity of a classification system for movement was apparent in Jewett's (1971) identification of logical progression processes and acknowledgement that individuals may experience even the highest processes at varying levels of ability. Although Jewett's work focused on the motor domain, it was stated ". . . that the three behavioral domains are not separable . . . /but/ that it is advantageous to isolate each one for the purpose of analyzing learning opportunities (Jewett, 1971, mimeo:14)."

2. Hierarchical organization: combined simple to complex and concrete to abstract continuum. The work of Taba and Elzey (1964:525) focusing on thought process was of importance to the present category system in the identification of ". . . learnable and therefore also teachable processes of thought." Their study was based on the nature of thought and its development.

Essentially, Taba and Elzey (1964) reiterated Bloom's (1956) earlier explanation of hierarchical arrangement of cognitive behaviors based on a simple to complex continuum. Deficiency in mastering the first step, a simple cognitive task, results in incapacity to function at higher levels (Taba and Elzey, 1964:526-527). One of the rating schemes applied to each cognitive task by Taba and Elzey (1964:529) represented level of abstraction and complexity in the hierarchical levels of thought. Three ideas from the work of Taba and Elzey (1964) had application to the current study. First, the idea that thought processes can be identified, learned, and taught. This idea was of importance because both teacher and student behavior were to be coded in the use of the present category system. Second, the organization scheme of a simple to complex continuum for cognitive processes used by Taba and Elzey (1964) gave further support to its adoption for use in organizing this category system, especially for The Cognitive and Kinetic-kinesthetic Domains. Finally, the rating schemes identifying the level of abstraction and the level of complexity of a cognitive task had application in the present study not only in The Cognitive Domain, but also in The Affective and Kinetic-kinesthetic Domains. The ideas of a simple to complex continuum and of level of abstraction and complexity reinforce each other in that ". . . specific thought processes . . . need to be mastered in a sequential order, because performing on the preceding level is prerequisite to being able to perform on the next (Taba and Elzey, 1964:530)." It was felt this concept had direct application to

the type of abstract thinking that can occur, as identified in The Cognitive Domain, as well as in application of levels of abstract thinking in The Kinetic-kinesthetic Domain.

3. Hierarchical organization: conscious to unconscious continuum. Krathwohl's (1964:27) work had as its organizing principles a continuum that progressed from awareness and being able to perceive, to willing to attend, to responds with a positive feeling, to organizing concepts of behaviors and feelings so they affect and become the life outlook. Krathwohl (1964:28) applied the term "internalization" to describe ". . . the process by which the phenomenon or value successively and pervasively become a part of the individual." In the special context of the Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook II: Affective Domain, internalization was used in three ways. First, it can function as ". . . a process through which there is at first an incomplete and tentative adoption of only the overt manifestations of the desired behavior and later a more complete adoption (Krathwohl, 1964:29)." Krathwohl (1964:29) stated that internalization ". . . provides equally for the development of both conformity and nonconformity, as either role pervades individual behavior." Finally, internalization, as inner growth, yields to inner control as one ascends the continuum from external control to inner control. Krathwohl (1964:30) explained this aspect in terms of inner control serving only to direct attention at low level responses, whereas inner control may produce appropriate responses despite external obstacles and barriers.

Krathwohl's (1964:31) summary of internalization had application to the total category system developed for this study in general, and in specific to The Affective and to The Kinetic-kinesthetic Domains. His summary stated:

> . . . it is probable that the internalization continuum is multidimensional. Certainly it has a simple-to-complex aspect as well as a concrete-to-abstract one. There is the external-to-internal control transition. There is an emotional component that increases up to a point on this continuum. Finally there are the conscious-to-unconscious aspects and the cognitive aspects of organization of attitudinal components (Krathwohl, 1964:310).

Figure 2, page 86, summarizes the use of organizing principles for the major divisions of the category system developed for this study. As indicated in Figure 2, the organization scheme of each Domain was determined primarily by one or two of the principles presented. Prior to attempting to interpret all of these schemes and their interrelationships it must be emphasized that hierarchical ordering was used in each Domain. Major categories and sub-categories were arranged according to the primary organizing principle(s) applied respectively.

The organizing principle, simple to complex, was primary in the development of both The Cognitive and Kinetic-kinesthetic Domains. Although the categories in each Domain were independently determined, it is interesting to note how closely they relate hierarchically. Figure 3, page 87, shows this relationship. To facilitate studying the Domain and level of category relationships, the categories have been arranged with low and high levels grouped horizontally as much as possible.

DOMAIN	ORGANIZING PRINCIPLE
Cognitive	* simple to complex concrete to abstract conscious to unconscious
Affective	* conscious to unconscious simple to complex
Kinetic-kinesthetic	* simple to complex * concrete to abstract conscious to unconscious

*Major influence

Figure 2

Summary of Organizational Principles
Used in the Category System

Cognitive category 1 has a direct relation to the two lowest Kinetic-kinesthetic categories. This reflects the very basic nature of categories 1 and 2 in The Kinetic-kinesthetic Domain as factual knowledge influences function. Cognitive category 2, Comprehension, is diagrammed to influence three successive levels in The Kinetic-kinesthetic Domain, the highest being Experimentation. This is interpreted to show increasing complexity in categories 2, 3, and 4 in Kinetic-kinesthetic, all requiring degrees of comprehension. Cognitive category 3, Analysis, has direct relation to Kinetic-kinesthetic category 3, Manipulation. In order to manipulate specific dance movement material, it must first be analyzed. Manipulation is considered low level due to the lack of necessity to generate any new

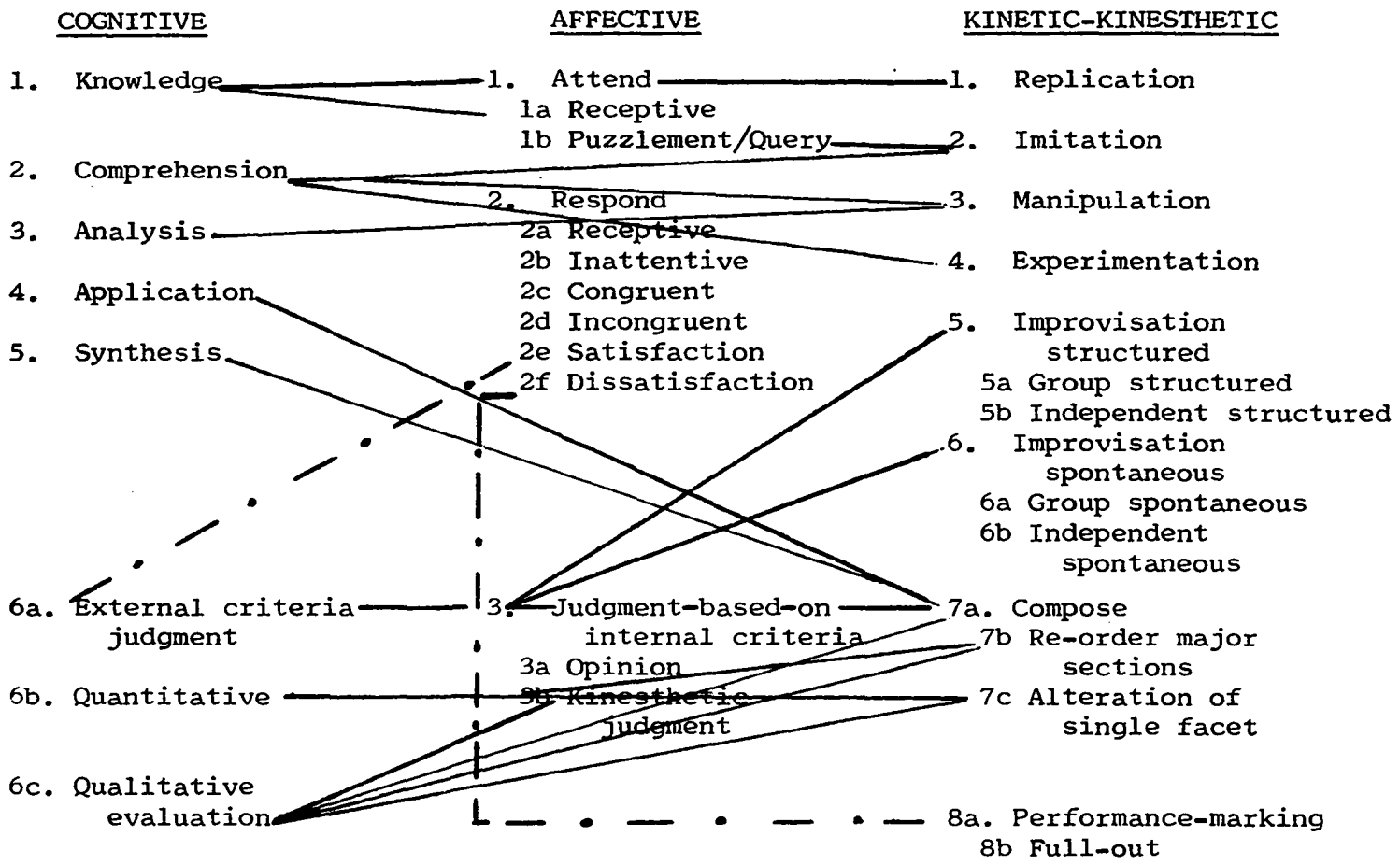

Figure 3

Application of Organizing Principle Simple to Complex to Individual Domains and Inter-Domain Relationships

movement material, merely to manipulate what has already been planned. Application, Cognitive category 4, in this category system, it may be noted by those familiar with Bloom's (1956) taxonomy, has been placed in reverse sequence with category 3, Analysis. This has been done with careful intent to emphasize that, in choreography, application follows analysis in a movement frame of reference. Consistent with this line of thought is the simple to complex scheme linking Cognitive category 4, Application, with Kinetic-kinesthetic category 7, Compose. Cognitive category 5, Synthesis, dependent upon earlier attempts at application also has impact on a more complex aspect of Kinetic-kinesthetic category 7, Compose. The relationships at the highest levels of all three Domains can be noted. The three Domains are joined together through external criteria and internal criteria functioning as they relate to Composing and Refining a dance. The general function of Judgment Based on Internal Criteria, Affective category 3, and the Kinetic-kinesthetic categories 5 and 6 dealing with Improvisation, is one of interrelation. This means that some "decisions" made in Improvisation stem from an intuitive and internal base. Affective category 3b, Judgment based on Kinesthetic Judgment, appears central in qualitative evaluation and in quantitative evaluation as it relates to Re-working a dance. Finally, in Performance, Kinetic-kinesthetic category 8, the response of Satisfaction or Dissatisfaction is prompted by both Internal and External criteria. This four way relationship has been diagrammed with a dash and dot (-.-.).

Figure 4, page 90, shows the use of the organizing principle conscious to unconscious. A direct relationship between a single Affective category and all of the other categories in the system is apparent. There is a definite fanning out from Affective category 2 throughout The Cognitive and Kinetic-kinesthetic category hierarchy. Once again the horizontal relationship between low level categories is clearly visible, reflecting a minimum degree of internalization necessary, in relation to the rest of the categories in the system. The repeated involvement of the kinesthetic sense and internal judgment in the Improvisation, Compose, and Performance categories (Kinetic-kinesthetic 5, 6, 7, and 8), indicates the high degree of internal awareness necessary to function at the high levels of The Kinetic-kinesthetic Domain. High level Cognitive evaluative function is shown to have a direct relation in quantitative terms to Affective category 3, the generalized internal criteria category group, and in qualitative terms to Affective category 3a, Opinion. It is clear from Figure 4, page 90, that Cognitive and Kinetic-kinesthetic responses consistently have an awareness and internalization factor.

The concrete to abstract organizing principle, shown in Figure 5, page 91, has as its base the range from definite, clearly defined ideas with little room for interpretation to open and free association with the essence of an idea. The diagram illustrates concrete ideas embodied in Cognitive categories 1, 2, 3, 4, and 5, as they spread and overlap with a number of categories in The

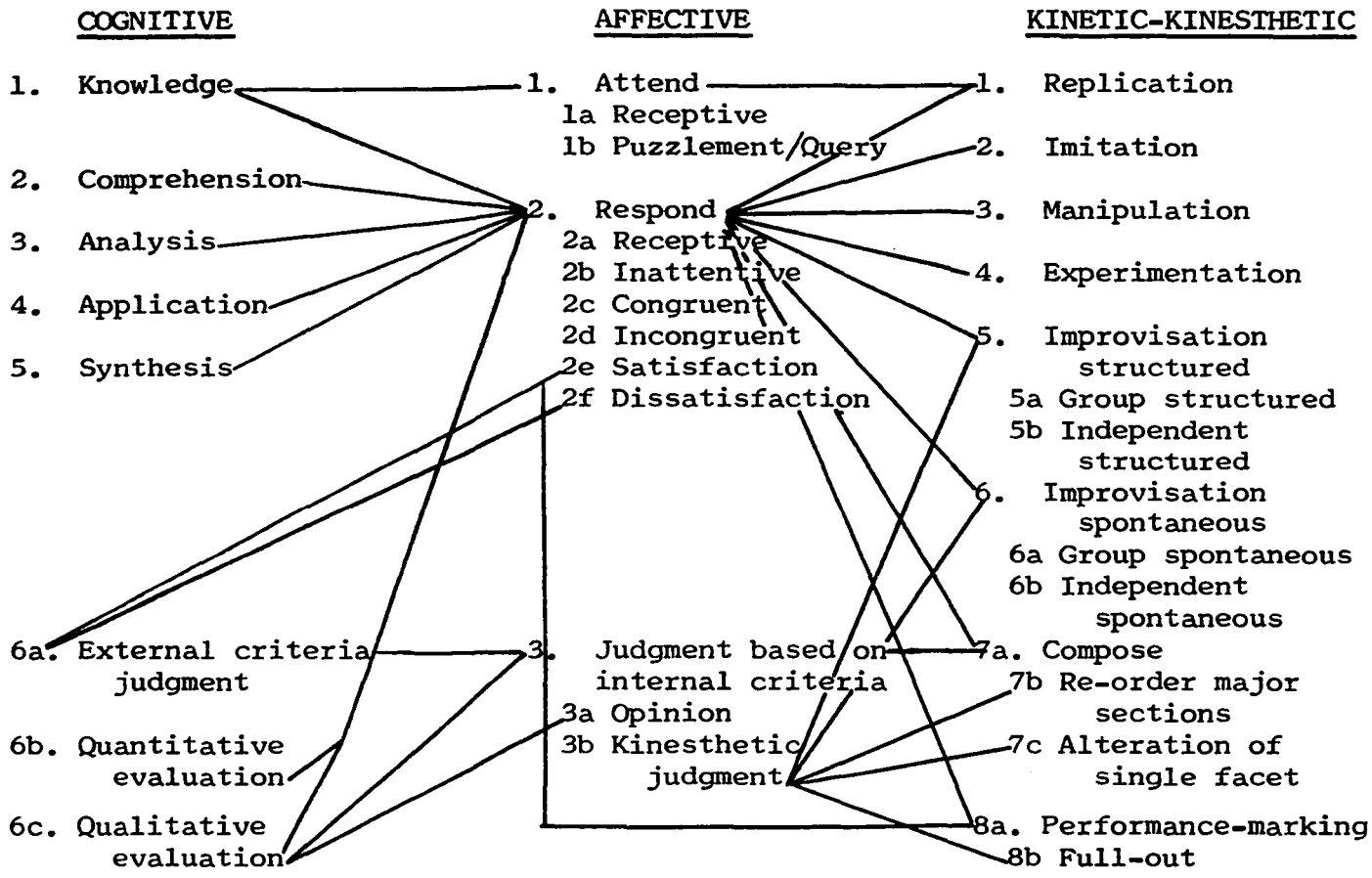

Figure 4

Application of Organizing Principle Conscious to Unconscious to Individual Domains and Inter-Domain Relationships

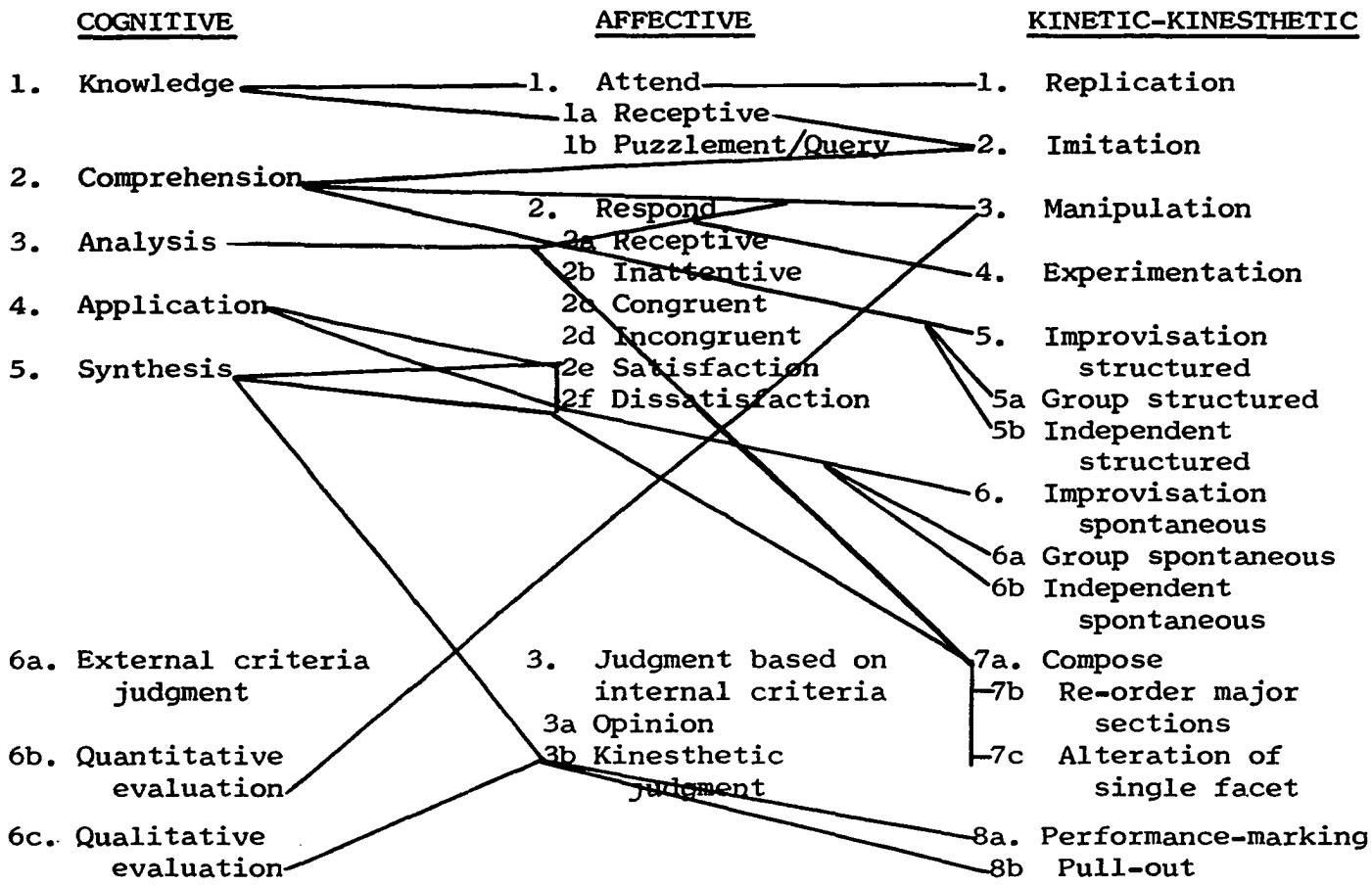

Figure 5

Application of Organizing Principle Concrete to Abstract to Individual Domains and Inter-Domain Relationships

Kinetic-kinesthetic Domain. This gives an indication that a concrete idea may be dealt with at a more abstract level of function, as well as an abstract idea having relationship to abstract function. Stated in another way, a concrete idea may be handled by the choreographer in its most obvious interpretation, or divergent thinking processes may be applied yielding many interpretations, not all of which may be well known or familiar. Cognitive category 1, Knowledge, influences Affective categories 1 and 1a, as well as Replication and Imitation, Kinetic-kinesthetic categories 1 and 2. The spread of relationship between a single Cognitive level and several Kinetic-kinesthetic category levels is shown with Comprehension relating to Kinetic-kinesthetic category 2, Imitation, level 3, Manipulation, and levels 5, 5a, and 5b, Structured Improvisation. Cognitive level 3, Analysis, shifts to comparable higher level categories in The Kinetic-kinesthetic Domain reflecting degrees of concreteness as they are needed in Kinetic-kinesthetic categories 3, 4, 5, and 7. Application, Cognitive category 4, again has direct relation to Spontaneous Improvisation and not with Structured Improvisation due to the more open nature of Spontaneous Improvisation. Cognitive category 5, Synthesis, is shown to have influence at Kinetic-kinesthetic levels 7 and 8, Compose and Perform. This is a reflection of the sophistication of ideas, and their degrees of abstraction, at the higher levels in the hierarchy in The Kinetic-kinesthetic Domain. Further, it indicates that abstract and intuitive component, Affective 3b, as it relates to Performance

levels. The one relationship that seems out of the ordinary is Cognitive category 6b, Quantitative Evaluation, and Kinetic-kinesthetic category 3, Manipulation. By definition in the category system itself, this particular evaluative function must occur in its more concrete function during Manipulation.

Figure 6, page 94, shows a summary of the horizontal relationships among Domains by individual categories according to the application of the three organizing principles used in this study. The interrelatedness of the three Domains is made clear by studying the application of each organizing principle independently. The complexity of the interrelatedness may be seen in similar relationships among like categories and Domains using each organizing principle.

In general, the use of the simple to complex and concrete to abstract principles shows similar relationships between The Cognitive, Affective, and Kinetic-kinesthetic Domains. Exceptions to this are Kinetic-kinesthetic levels 5 and 6, apparent only at the highest level of The Affective Domain in the simple to complex organizing scheme but more relatedness is shown with both Domains when organized using the concrete to abstract principle. This may be interpreted to mean that the Improvisation functions need to be approached with more open thinking, and that closed and limited responses do not contribute to the more advanced levels of improvisation. Within The Affective Domain, levels 2b, 2c, and 2d have not been used in any interrelated way. This is due to the nature of these categories. They were designed only at the

SIMPLE TO COMPLEX

C1	A1	Kk1
C1	A1a	Kk2
C2		Kk2
C2		Kk3
C2		Kk4
	A2a	Kk4
C4		Kk7
C5		Kk7
C6a	A2e, 2f, 3	Kk8a
C6a	A3	Kk7a
C6b		Kk7b, 7c
C6c	A3b	
C6c		Kk7a, 7b, 7c
	A3	Kk5, 6

CONSCIOUS TO UNCONSCIOUS

C1	A1	Kk1
C2, 3, 4, 5, 6a, 6b, 6c	A2	Kk1, 2, 3, 4, 5 6, 7, 8a
C6a	A2e, 2f, 3	Kk8a
C6a	A3	Kk7a
	A3b	Kk5, 6, 7b 7c, 8b

CONCRETE TO ABSTRACT

C1	A1	Kk1
C1	A1a	Kk2
	A1a, 1b	Kk2
C2		Kk2, 3, 5, 5a, 5b
C2	A2a	Kk3, 4
C3	A2a	Kk3, 4, 7a, 7b, 7c
C4	A2e, 2f	Kk6, 6a, 6b, 7a, 7b, 7c
C5	A2e, 2f	Kk7a, 7b, 7c
C5	A3b	Kk8a, 8b
C6b		Kk3
C6c	A3b	Kk8a, 8b

Figure 6

Summary of the Horizontal Relationships Among Domains by Individual Categories According to the Application of the Three Organizing Principles

Respond level and, by their given definitions, cannot be organized on simple to complex or concrete to abstract continuum. Category 2 in The Affective Domain has the greatest single interrelationship with both the Cognitive and Kinetic-kinesthetic Domains. Simple to complex and concrete to abstract schemes show similar relationships by Domain and category level.

The complex interrelationships created when applying the principle of hierarchy to the simple to complex, concrete to abstract, and conscious to unconscious continuum are important in the development of the category system for this study. Analytical descriptions of teacher and student behavior in a choreography class necessitate development of a means to identify the existence of the interrelationships.

THE CATEGORY SYSTEM

Three major sources were used in developing the category system for describing teacher-student verbal and nonverbal interaction in the teaching of choreography. The composition and organization of The Cognitive and Affective Domains were influenced by existing taxonomies in the respective domains, as well as by descriptive-analytic research that emphasized the interplay among domains. The derivation of The Kinetic-kinesthetic Domain was from dance literature related to the choreographic process and the integrated function of The Cognitive, Affective, and Kinetic-kinesthetic Domains for the choreographer.

The category system is multidimensional and has been organized in four major divisions: (1) The Cognitive Domain,

(2) The Affective Domain, (3) The Kinetic-kinesthetic Domain, and (4) The Technical dimension. The categories have been arranged hierarchically in each Domain. Eight categories comprise The Cognitive Domain, with 10 categories in The Affective Domain, and 14 representing The Kinetic-kinesthetic Domain. The Technical dimension was developed as an aid in the coding procedure and has three categories.

The category system was planned to include the following kinds of behaviors: teacher verbal and nonverbal behavior, and student verbal and nonverbal behavior. The system provided for identification of more than one mode of behavior as exhibited simultaneously by a single individual. Definitions for the four behaviors identified as applicable to all Domains of the category system are as follows:

> Teacher behavior - the teacher's action, verbal or nonverbal, to initiate responses, and/or respond to the action of another person(s).
>
> Student behavior - the student's action, verbal or nonverbal, to initiate responses, and/or respond to the action of another person(s).
>
> Verbal behavior - oral declaration of fact, description, feeling, or judgment.
>
> Nonverbal behavior - gesture, body movement, body position, and facial expression with conscious or unconscious intent to communicate.

Each of the four major divisions of the category system is presented individually, with The Cognitive first, followed by The Affective, Kinetic-kinesthetic, and Technical Divisions respectively. Each category within a Division is defined, followed directly by a discussion and examples.

DIVISION ONE: THE COGNITIVE DOMAIN

The Cognitive Domain has as its primary focus giving and receiving information with specific interest in the development of factual content from simple to complex levels of operation. The Taxonomy of Educational Objectives, The Classification of Educational Goals. Handbook I; The Cognitive Domain by Bloom, and others (1956) was the primary source for the categories within the Domain. Eight categories were identified: Knowledge, Comprehension, Analysis, Application, Synthesis, Judgment based on External Criteria-preset standards, Judgment based on External Criteria-quantitative evaluation, and Judgment based on External Criteria-qualitative evaluation.

Knowledge (C1)

> Statements of specific data, terminology, and definition of facts. The thought process is recall, or memorization of specific data, terminology, definitions, or facts (Bloom, 1956:62-74).

Discussion

The level of knowledge refers to facts, ideas, patterns, and other specific information which can be isolated and remembered separately (Bloom, 1956:62). The Cognitive function here assumes a verbal character. Historical reference to dance forms, definitions of terms related to technique and movement quality, and specific recall of direction of movement in a major portion of a dance reviewed are a few of the aspects of dance appropriate for a category one Cognitive function. The cognitive function of recall

or specific information and patterns is considered a part of The Kinetic-kinesthetic Domain when a movement response is clearly designated. Stated in another way, there is a cognitive function that occurs within the movement response. When the response assumes a verbal character, it is recorded as Cognitive. When the response assumes a movement or motion character, it is recorded as Kinetic-kinesthetic.

Examples

"What is stated in the first quarter of the first long segment of a dance?"

"Define the term legato."

"What is the dominant characteristic of the rondo form?"

Comprehension (C2)

Recognition of relationships and implications between given information (Bloom, 1956:89-91, 204).

Discussion

This represents the lowest level of understanding and is not synonymous with having the full or complete grasp of a message. Behaviors included are of two types: translation, and interpretation. The ability to translate the communication into another form is important to dance in that verbal cues must be translated into movement, and often movement must be explained verbally. Interpretation involves re-ordering the given ideas into a new scheme. This thought process occurs in the skill of manipulating materials (Bloom, 1956:87-91). The choreographer

explains the feeling, direction, main impact of his piece in words. Projection of the intent of the piece makes this different from simple repetition of specific sequences of movement. As a result the dancer infuses the movement with more sensitivity to the quality and expressiveness of the movement, while still retaining the awareness of the technical demands of the movements themselves.

Examples

"What are the other dancers doing at the time of your exit?"

"Recall that movement phrase you learned from Jennifer's dance. Here is the music she has selected. Listen to it once, and then we'll do the movement phrase the next time."

"Your spacing is off-center. Is this supposed to be asymmetrical?"

Analysis (C3)

Recognition of the structure of the material, includ-
the conditions that affect the way it fits together.

Discussion

Bloom (1956:144) emphasized ". . . the breakdown of the material into its constituent parts and detection of the relationships of the parts and of the way they are organized." Analysis is considered as an aid to fuller comprehension or as a prelude to an evaluation of the material (Bloom, 1956:144).

In the special context of this category system, the teaching of choreography, the cognitive function of analysis occurs before specific application to movement materials. As stated

earlier, in the discussion for Knowledge and Comprehension, a cognitive function is a part of the motion response. In dance, analysis of the problem or idea for the study or dance occurs cognitively before or in conjunction with solving the movement problem. Once again, when the response in analysis is primarily verbal, the recording is placed in The Cognitive Domain. When the desired response clearly is designated as movement, the recording is in The Kinetic-kinesthetic Domain.

It may be noted that Bloom (1956) places Analysis at the fourth level of classification. Further, Bloom's (1956) definition and explanation for Analysis have been accepted for Analysis in the category system for this study. The basis for placing Analysis as category three, and not as category four, in the present system lies within the special way the choreographer uses the function of Analysis. Analysis is essential as a preparation for an initial attempt at manipulating movement. It also serves as a base for higher level evaluative functions that require qualitative judgments, selection, and refinement.

Examples

"Jan, how have you manipulated that theme?"

"Music visualization has been used throughout this particular study. This means the movement appears to imitate such things as the music dynamics, tempo, and treble and bass emphasis. Specifically, what movements were an imitation of the music dynamics, and of the treble and bass emphasis?"

Application (C4)

Selection of appropriate methods and performance operations required by the problem situations. The use of specific information in specific situations.

Discussion

The selection of the appropriate method for solving a choreographic problem is a reflection of the understanding and analysis of the problem itself. If the application occurs as a movement response, it is coded as Kinetic-kinesthetic. If, however, the response is verbal, such as in a discussion of dance style and application of historical facts, this is clearly a cognitive function and recorded in The Cognitive Domain.

Examples

"The style of Sasha's dance is religious medieval. How should it be costumed?"

"How are you going to assure unison movement and timing in the part of the piece that is unaccompanied?"

"The stage we'll be using at Prospect Hill has only one downstage leg-stage right. This means you have lost three of your usual entrances. You can still cross over backstage. Diagram the necessary revision in entrances and exits.

Synthesis (C5)

Generation of new ideas and solutions.

Discussion

Bloom (1956:162) makes reference to the use of divergent thinking used in synthesis in the following statements:

> This is the category in the cognitive domain which most clearly provides for creative behavior on the part of the learner. However, it should be emphasized that this is not completely free creative expression since generally the student is expected to work within the limits set by particular problems, materials, or some theoretical framework.

Synthesis is most evident in the process function of composing a dance, identified as category seven in The Kinetic-kinesthetic Domain. The synthesis is the cognitive input concurrent with actual choreographing or composing a dance and is used in aiding the selection process. The specific demands of movement style and form, the relationship of movement to accompaniment and to special stage properties are included in synthesis as a cognitive function in choreography. The identification of synthesis in The Cognitive Domain is evidenced in verbal or written responses. Synthesis is also a factor in the higher level and more abstract improvisation problems. The dancer melds his own time-space-energy forces with those of other dancers in mutual silent endeavor to achieve a single thread of unity, while spontaneity is undiminished. The particular categories in The Kinetic-kinesthetic Domain to which this is applicable are Spontaneous Group Improvisation (K6a), and Spontaneous Independent Improvisation (K6b).

Examples

> "If you were to combine the two philosophies of Humphrey and Cunningham, generating a new approach to choreography, what key ideas would form its theoretical base?"
>
> "Let's deal with the idea of 7 ± 1. What is one way you might use this as a stimulus for a dance?"
>
> "Let's redesign the inside of Coxe Hall to become a versatile dance theatre."

Judgment Based on External Criteria-Set of Standards, Pre-Set Forms (C6a)

Development and application of a set of standards determined by the teacher, outside source, or printed materials.

Discussion

This category is used when the judgments made are based on special forms, such as rating scales, or when the criteria are known to the entire group or to an individual. Intuition is not a part of this type of judgment.

Hawkins (1964) and Turner (1971) have suggested facilitating evaluation of a piece of choreography in two ways: (1) by the use of a set of questions, and (2) by the use of a rating form. Suggestions for the form of each has been provided by Hawkins (1964) and Turner (1971) in their respective texts. Such forms as these may be useful as a base for making judgments about a dance. This does not exclude the use of other standards and forms.

Another form of criteria is inherent in the statement of the choreographic problem itself. The limitations and choices that are stated initially become the basis for judgment of those particular choreographic responses (Hawkins, 1964:145, Turner, 1971:68).

Examples

"Using the evaluation guide in your text, discuss the strong and weak points of your dance."

"State the assigned problem, as you understood it. Then tell us how many aspects of the problem were clearly shown in the study we just watched."

Judgment Based on External Criteria-Quantitative Evaluation (C6b)

Application of external criteria with reference to the number of operations that occur in a given incident.

Discussion

This type of evaluation has value in helping a student sense over use or lack of use of specific movement materials. Horst (1961), listing his typical questions and comments criticizing dance studies, showed consistency in his concern for economical, efficient, and effective use of movement material. The efficiency, economy, and effectiveness of the selection and use of the movement materials in a dance phrase are important as one means of helping students apply external criteria to their work. The efficiency and economy are of particular importance in this category.

Examples

"Have you used as many of the parts of the A theme as you identified earlier as part of that thematic material?"

"Using Laban's space ideas as a basis, how many have you used?"

"How many of the minimal essentials required of all dances have you used in the chaconne?"

Judgment Based on External Criteria-Qualitative Evaluation (C6c)

Application of external criteria with reference to the distinguishing attribute(s) that occurs during a given incident.

Discussion

The distinguishing attributes of a dance contribute to the effectiveness of the piece. Style is achieved by combining the elements of dance, Time, Space, and Dynamics, in special ways. Oriental style, for example, needs different Time-Space-Dynamics interplay from that associated with the earthy and robust Middle European movement style.

Evaluation of this nature is necessary for critiquing dances. Such judgments may be rendered by the choreographer himself or by another observer. Without a special style, decor, or quality the impact of the entire dance is lessened. Humphrey (1959:163) drew attention to the need for special vitality in a dance when she stated:

> . . . medium pace, medium dynamics, medium everything, and extreme only in their /dances/ dullness. Moderation in all things may be a good recipe for living, but in dancing it is fatal.

Qualitative evaluation is considered a part of the critical awareness the creator must develop as he improves the level and quality of his choreography (Hawkins, 1964:111-115).

Examples

"What makes the use of the downstage area effective in the mime type episode?"

"With reference to the title of this dance, 'Vital Spark in Time', how well did the concept of 'vital spark' permeate the entire piece or segment of the dance?"

DIVISION TWO: THE AFFECTIVE DOMAIN

The Affective Domain has as its primary focus the attitudes, values, and feelings held by an individual. Galloway (1962), Heger (1968), Anderson, Struthers, and James (1970), and Grant and Hennings (1971) and others, all have noted the importance of being able to describe the feelings and values of an individual. The verbal and nonverbal means through which feelings, attitudes, and values are expressed were of central concern in this Domain.

Galloway has emphasized consistently that children learn a nonverbal classroom language which enables them to "read" the teacher and, in turn, to be favorably "read" by the teacher. Acceptance of this idea does not denounce the function of verbal behavior in the classroom setting. Rather, it suggests that ". . . the nonverbal communication of meanings, attitudes, and feelings are also highly informative (Galloway, 1962:3)." Halpin (1960) described such nonverbal communication as muted language.

Identification of the muted language through outwardly visible behaviors that are representative of inner feelings, attitudes, and values was the primary focus for the categories in this Domain. Verbal responses, reflective of attitudes, feelings, and values also were deemed a part of The Affective Domain.

The three primary category divisions in The Affective Domain, Attend, Respond, and Judgment Based on Internal Criteria,

were derived from the Taxonomy of Educational Objectives, The Classification of Educational Goals. Handbook II: Affective Domain by Krathwohl and others (1964). The work of Galloway (1962) on nonverbal behavior served as a base for determining sub-categories for the major category, Respond. Both the dance literature and Krathwohl's (1964) work provided the background for selection of the sub-categories within the major division Judgment Based on Internal Criteria.

Within the framework of the three major divisions of The Affective Domain, 10 categories have been identified: Attend-Receptive, Attend-Puzzlement or Query, Respond-Receptive, Respond-Inattentive, Respond-Congruent, Respond-Incongruent, Respond-Satisfaction, Respond-Dissatisfaction, Judgment Based on Internal Criteria-Opinion, and Judgment Based on Internal Criteria-Kinesthetic. By definition, the primary intent of the 10 categories was nonverbal behavior. Four categories were designated specifically to include verbal responses: Respond-Incongruent, Respond-Satisfaction, Judgment Based on Internal Criteria-Opinion, and Judgment Based on Internal Criteria-Kinesthetic.

Attend-Receptive (A1a)

> Individual is physically present, demonstrating an attitude of paying attention. This attitude is evident in facial involvement and eye contact.

Discussion

The primary concern is that an individual is sensitized to the existence of stimuli. This is the lowest level of

awareness, and ". . . the individual may not be able to verbalize the aspects of the stimulus which causes awareness (Krathwohl, 1964:177)."

Examples

Individual seated on the floor with focus toward the central dialogue between teacher and another student.

Individual passively observing two dancer's improvisation. Observer shows no intrigue or fascination at what is occurring.

Attend-Puzzlement or Query (A1b)

Individual assumes facial expression indicating confusion, doubt, question and uncertainty about the central dialogue or action.

Discussion

An individual who is sensitive to the stimuli may also express confusion or lack of initial understanding through facial expression. This response is placed at category one complexity, Attend, because full participation and involvement probably is not possible while doubt and confusion about the central dialogue or action exists.

Examples

While listening to a discussion or a question, individual frowns or tilts head indicating uncertainty about the communication he is observing or hearing.

Individual narrows eyes revealing scepticism and uncertainty about the main action of the class.

Respond-Receptive (A2a)

Outward, observable nonverbal behavior, reacting to on-going class activities, that indicates total involvement.

Discussion

Responses in this category are based on a level of awareness that is higher than category A1a. Sufficient motivation exists so this individual commits himself to active involvement within the situation (Krathwohl, 1964:118). Galloway (1962:147) referred to the active involvement as showing that the ". . . lines of communication are open. . . ."

Examples

Individual directs focus and body lean in the direction of the central dialogue to the extent that his concentration does not waver in favor of peripheral activity.

Individual moves forward, boldly or by small degrees, toward the main action of the class.

Respond-Inattentive (A2b)

Individual breaks eye contact and makes obvious observable gestures with the body indicating fragmented interest in, or complete disregard for, the mainstream class activity.

Discussion

In order to give a fragmented or negative response, the individual has to have deep enough awareness to realize that the situation at hand does not require his undivided attention.

Examples

Individual sprawled on the floor not watching the demonstration, or glancing in that direction infrequently.

Individual assumes a slouched or slumped posture and fidgets with his toes, hair, pencil, and paper.

Respond-Congruent (A2c)

Nonverbal cues that reinforce and clarify the credibility of the response.

Discussion

Galloway stated that ". . . congruity occurs when there is consonance between verbal intent and nonverbal referents (1971:174)."

Examples

Nodding head in agreement with affirmative statement.

Tapping fingers to emphasize a point.

Respond-Incongruent (A2d)

Contradiction between verbal and nonverbal cues in different body parts.

Discussion

A mixed message or incongruity exists when there is a discrepancy between verbal message and the nonverbal information (Galloway, 1971:174). A positive or supportive statement is made by an individual, but the speaker fails to sustain or make

eye contact with the addressee, or stands with a great deal of tension in his body. These observable behaviors provide the setting for doubt and disbelief in this conflict of verbal and nonverbal communication.

Examples

Same mover and speaker: a negative statement made, accompanied by positive facial expression.

"That was a good study." Accompanying gestures are of introspection; no positive reinforcement with eye contact, smile or warmth in voice.

Respond-Satisfaction (A2a)

An overt emotional response, generally of pleasure, zest, or enjoyment. Comments made by the teacher that are encouraging.

Discussion

Satisfaction has been placed higher in the hierarchical arrangement of this Domain than category A2a, Respond-Receptive, because a positive attitude of involvement, and subsequent involvement in the action is likely to occur before one can feel satisfaction (Krathwohl, 1964:119). Galloway (1962:146) used ". . . enthusiastic support" to identify strong encouragement, active acceptance, and enthusiastic approval displayed by the teacher. He (Galloway, 1962:146) indicated that vocal language is ". . . any voice quality indicating pleasure or warm acceptance. The use of the voice through intonation or inflection supports approval and support." The descriptions used by Galloway (1962)

apply to either the teacher or the student in the category system developed for this study. However, those inner, silent responses of satisfaction experienced by an individual cannot be recognized by the observer using the category system.

Examples

Individual spontaneously squeals in delight.

Individual makes small jumps in place, or claps hands and slaps the body.

"Good, keep going, yes - yes, you're doing fine."

Respond-Dissatisfaction (A2f)

Overt emotional response, generally of dismay, lack of self-confidence, disgust, or displeasure.

Discussion

A response indicating dissatisfaction, in the context of this study, has an evaluative element. It occurs after observation of all or part of a dance, or actual participation in a dance. The response does not need to be spontaneous. It may assume a more contemplative nature. Galloway (1962:149) described this category in this way: "Vocalization is one of disappointment, depreciation, or discouragement."

Examples

Individual "freezes" in place, reflecting annoyance with personal performance, or with the class situation.

Individual mutters to himself in low volume indicating frustration and annoyance.

Judgment Based on Internal Criteria-Opinion (A3a)

Demonstration of a strong feeling in a positive or negative manner.

Discussion

Krathwohl (1964:181) suggested that the lowest level of valuing is also the lowest level of certainty, meaning the position expressed is somewhat tentative. The individual values the phenomenon enough so he voluntarily responds and seeks ways to respond (Krathwohl, 1964:50). Krathwohl (1964) and H'Doubler (1957) have indicated the necessity for the internalization part of the valuing process as a part of the learning process. H'Doubler (1957:62) expressed the need in this way:

> Mere perception and comprehension of knowledge are not sufficient for the fullest development of the mind. To know is the essential first step, but it is the expression of what we know that develops character and a sense of values.

Examples

"It is simply a beautiful piece. However, minimal style just doesn't appeal to me."

"It's boring, and it turns me off."

Judgment Based on Internal Criteria-Kinesthetic (A3b)

Opinion based on the feeling state of the body in motion.

Discussion

Opinions are expressed based primarily on the real or perceived feeling of the body in motion during a given dance or phrase. Immediate reaction, based on kinesthetic feelings, to a dance just observed is one form of this category. This is an intuitive response, often referred to as a "gut level" response.

A more reflective kinesthetic response can be made by either the performer or the observer. This type of response demands a deeper sensory awareness of the motion feeling as it occurs specifically in parts of the body, or as a unified bodily reaction.

H'Doubler (1957:xxii) has said that ". . . heightened kinesthetic perception is the only reliable guide to . . . critical awareness and self discipline." Hawkins (1964:4) emphasized that the kinesthetic sense ". . . enables the human being to fall into and perceive the movement gestures of his fellow man." Referring to the basic materials of dance, Turner (1971:27) stated that:

> The body must become highly sensitive to dimensions of height, depth, and width and the elements of movement and motion such as volume, shape, line, quality, texture, timing and spatial design; all must be sensed kinesthetically by the body.

H'Doubler (1957), Hawkins (1964), and Turner (1971) have indicated the necessity for kinesthetic awareness, and that kinesthetic judgment has an important function for the choreographer, for the dance student, and for the general audience.

Kinesthetic judgment is ingrained as a part of stating intuitive opinions about the "rightness" of a dance.

Examples

"It's earthy, grinding into the floor like that."

"I feel the inner tension is lost when you do that side fall."

DIVISION THREE: THE KINETIC-KINESTHETIC DOMAIN

The Kinetic-kinesthetic Domain has as its primary focus the dance movements of a single person, or a group of dancers, that are particularly representative of the choreographic process as it is experienced in a choreography class.

The title of this Domain was derived from repetition of the use of these two terms in the dance literature, especially in choreography. The combination of the natural kinetic drive of the body, combined with the inner awareness of motion which has been quickened by training and conscious attention to the act of moving, is unique to the needs of the choreographer.

Lockhart and Pease (1973:155) defined kinetic as " . . . pertaining to dynamic forces which impart power and motion," and kinesthetic as ". . . an internalized awareness of body placement and movement; and awareness of the relative force and range of a movement." Turner (1971:23) indicated that, as an instrument of communication, the human body needs ". . . to become kinetically alive and kinesthetically aware." Judgment rendered in the selection of materials, amount of manipulation, texture, and the

like is based upon knowledge of effectiveness and an intuitive sense of "rightness" stemming from kinetic-kinesthetic experience.

The categories defined for The Kinetic-kinesthetic Domain are: Replication, Imitation, Manipulation, Experimentation, Structured Improvisation, Spontaneous Improvisation, Composing, Reordering Major Sections, Reworking One Facet, Full-out Performance, and Marking.

Replication (K1)

Exact repetition of a harmonious sequence of movements after observation of that sequence.

Discussion

The values and importance of learning precomposed phrases was stressed by Lockhart and Pease (1973:61) as a means of illustrating ways of extending a movement and developing a phrase, and of helping the student sense the difference between "exercising" and "dancing." Laban (1963:23) also has made reference to the need for exact repetition of the movement of another individual. Replication has been selected as the lowest level in this Domain because it does not involve further treatment of the movement by the dancer. He simply repeats the movement precisely as it was shown. The cognitive function within this movement response is Knowledge, more specifically recall of specific information.

Examples

"Watch Mary's study and be prepared to repeat it without her next time."

"Repeat the first two phrases of Anne's piece."

Imitation (K2)

Repetition of a sequence of movement, but with inaccuracy of detail.

Discussion

Imitation is similar to Replication in that it calls for no change in the material by the dancer. He needs to repeat the movement as well as possible. Imitation differs from Replication in that it is based on the assumption that more complex movement sequences have nuances that make error in repetition more possible.

Examples

"Take the first two sections with me and try to pick it up."

"Liz, repeat the phrase Carrie just showed, but start eight counts after she does."

Manipulation (K3)

Purposeful rearrangement of a given movement sequence so that portions of the original material are still observable and identifiable.

Discussion

The term manipulation originally was derived from its association with music composition. Many ways were used to extend, reduce, and change small amounts of thematic music material. This means of expanding limited amounts of music also has been practiced in dance composition (Horst, 1961:23-27). At

an early level of experience, manipulation serves as a form of discipline. The choreographer usually tries to limit his movement material to the original phrase, and then transposes, repeats, diminishes, augments, inverts, and reverses the original order. The more experienced choreographer may return to this step in the choreographic process to help economize his use of movement. Manipulation is considered a Kinetic-kinesthetic function because movement response is primary. The Cognitive component, Comprehension, is a concurrent function and is designated as a cognitive behavior only if a verbal response is given.

Examples

> "Using the four measure phrase as a base, expand the movement patterns to a 16 measure phrase. Choose two or three of the following means to accomplish this: exact repetition, transposition, augmentation, tempo or speed change."
>
> "Take the two movement themes and manipulate that movement material so you have 36 measures for the total phrase."

Experimentation (K4)

A means to obtain movement material when no movement has been suggested.

Discussion

An outside source sets up the bounds for the experimentation problem. All participants are cognizant of these bounds. The limitations are set in such a way that experimentation is done independent of other dancers. There is no

contemplative selective phase in experimentation. The movement bursts forth kinetically.

Examples

"Get from here to there in just six seconds."

"Go feet first over all the props."

Group Structured Improvisation (K5a)

> Spontaneous small group or pair response to movement ideas or movements which have been imposed by the teacher or a student. Structure for the problem is provided by specifying the movement or ideas to be used as stimuli.

Discussion

Satisfactory outcome of an improvisation experience for beginners or more advanced students depends on the provision of the necessary verbal and sensory cues (Hayes, 1964:77). The motivation, or stimulus, provided needs to be the catalyst for small group paired involvement in an atmosphere that encourages concentration on the idea and qualification of the movement. The carefully designed improvisation problem reduces the selection for the dancer (Ririe, 1969:46). Hayes was of the opinion that:

> Group improvisation can also teach the student to respond sensitively to the movements of other dancers and to relate his own movement to them in a meaningful fashion (Hayes, 1964:77).

Improvisation at this level is supported by the cognitive functions of Analysis, Application, and Synthesis, depending on the level of abstraction and complexity of the problem.

Examples

"In groups of three to five people, each group establish a dramatic environment that has a definite beginning and closing, using only parts of the trunk to lead the body into space. Try for both kinesthetic and mental awareness of what you are doing so you can recapture parts again."

"In fours, work with just your head and one foot creating a tea party atmosphere."

Independent Structured Improvisation (K5b)

Spontaneous individual response to movements or movement ideas which have been imposed by a teacher or a student. Structure is provided by the given movements or movement ideas.

Discussion

Category K5b differs from K5a only in that there is no necessity to involve other dancers in the movement that is generated. This is slightly more difficult, thus it is placed at a higher level. The difference in difficulty is the source of stimuli coming only from the one dancer, without opportunity to respond to the stimuli of another person. Working alone, more conscious relationship among the elements may be possible. In this regard, the dancer knows when he is in a rut, and does not use familiar responses over and over again.

Examples

"Using curved shapes as your stimulus, work for a feeling of expanding and contracting the shape within this five foot cube shaped space limitation."

"Become an integral part of this grocery cart as you move at different levels."

Group Spontaneous Improvisation (K6a)

Group movement as an unplanned response to an inner or outer stimulus.

Discussion

Although all improvisation has the characteristic of spontaneity, this particular level of improvisation represents the ability to be sensitive to several bodies in motion simultaneously, with little in terms of structural guidelines. This kind of work

> . . . can lead the dancer into unanticipated movement responses that may reveal to him beautiful and unusual movement patterns that might not have been discovered in any other way (Hayes, 1964:77).

Both an inner and an outer stimulus work in improvisation, due to past knowledge and experience and feelings impinging on the flow of movement responses. The responses are complex, and ". . . charged with feelings and associations that are largely subconscious (Turner, 1971:33)." This infers Synthesis, cognitive category 5, of Time, Space, and Dynamics knowledge and sensitivity to the impact of each during improvisation.

Examples

"In your groups of six, use the tactile sensation as a motivator."

"Working to sense total group dynamics, respond to any audible cues."

Independent Spontaneous Improvisation (K6b)

Unplanned movement in response to an inner or outer stimulus, designated to be worked alone. This independent venture is often self-motivated.

Discussion

The independent choreographer is free to improvise independently, always. When such action occurs, he lets the movement "take him" while trying out various sensations he may have decided to use in a piece. This is an essential part of the freshness of each new piece.

Examples

"Work to create elasticity qualities in your movement."

"Select a percussion instrument and use it in any way as a stimulus."

Dancer may be seen working on one specific movement, and suddenly seem to leave it in the stream of movement that takes over as the dancer gives way to kinetic impulse.

Compose (K7a)

Join together unique, original movement patterns to frame a whole dance, or section of a dance, for performance.

Discussion

The purpose is to construct a finished dance or complete a section of a dance. There is usually some verbalization indicating the explanation of the composition problem. Composing

entails the use of all or some of the process functions at lower levels in this Domain. All are useful in seeking the goal of clarity and unity of a dance. Lippincott (1969:6) has written "notes on choreography" attributed to Horst:

> Good composition has variety with unity and variety.
> Good composition should develop logically from a germinal theme.

An orderly arrangement of dance movements is necessary to giving form to a composition. This is done by manipulating the elements of thematic material which is pertinent to the idea (Lockhart and Pease, 1973:83). H'Doubler (1957:xxii) pointed out that the background for composing is enough education "movement-wise" to have ". . . the ability to appropriate and modify the instinctive motor responses into consciously selected and disciplined effective acts."

Both the cognitive functions of Synthesis and Evaluation occur as a part of the composing process. The ideas is generated with ways to solve it. Selection of material is dependent upon evaluation in The Cognitive and Affective Domains.

Examples

"Compose a two minute dance in two part form based on levity and humor."

"Compose a study that uses natural sounds to create the rhythmic environment."

Re-order Major Sections (K7b)

Application of a set of standards and values based on internal criteria resulting in alteration of major sequences within a dance to enhance the effectiveness of the entire piece.

Discussion

The choreographer applies intuitive judgment in sensing the need for major changes in the overall order of the piece, or in one large section of the dance. The necessity for change is felt because of items such as broken continuity in flow of movement, spatial relationships that do not show clearly, and style that does not fulfill the intent of the piece.

Examples

"That entire third section, with everyone at low level turning, rolling, and twisting, feels more like a beginning rather than a middle section. Try it again making that the first section and keep the rest of the order the same."

"I don't know what it looks like, but to perform it the directional changes are too many and too fast. Can you change the first section so there's some unison?"

Re-work A Single Facet (K7c)

Application of a set of standards to short portions of a dance as they relate to projection of technique, body line, and rhythmic clarity.

Discussion

The basic difference between K7b and K7c is that K7c requires more discrimination in determining the single quality or movement

that lessens the effectiveness of the entire piece, and the way to alter that facet to enhance the dance.

Examples

"The turning section needs re-working. See if it feels like too many turns, too fast, or what. It's not clear now."

"What about the quartet? Are the lifts an integral part or just stuck there? Try it without them, and find out."

Performance-Marking (K8a)

Casual imitation of a pre-planned phrase, series of phrases or movements, or a completed dance in terms of patterns, spatial design and flow of planned sequence.

Discussion

The dancer uses "marking" as a way of reviewing a dance checking sequence, music cues, and the like, without expending a lot of energy physically. The dancer "sketches" out the dance. Performance involves the execution of a pre-planned phrase, series of phrases or movements, or a completed dance.

Examples

"Walk through the first two sections on stage to check your entrances for collisions and room backstage."

"We'll block out the whole dance tonight so you get the sense of unity."

Performance-Full Out (K8b)

Total projection of the dance, or phrase, by synthesizing technique, dynamics, rhythmic flow, and inner sensitivity.

Discussion

The clarity of choreography of a study or dance presented in class or onstage is enhanced by execution that is clear and confident. The full experience of performing is practiced each time a piece is shown for the purpose of constructive criticism.

Examples

"You must show the clarity of the line; either it is a straight line, or it is not intended to be straight."

"Do this so clearly that we don't need a program note to help us understand what it is all about."

"Margy, show your phrase now."

DIVISION FOUR: THE TECHNICAL DIMENSION

Non-choreographic in nature, this dimension has as its central focus, organization details in the conduct of class, and videotape technical recording problems.

X

Uncodable statements or situation. Technical audio or video recording deficiency. No other category defines the situation exclusively.

/

Confusion, no productive classwork obvious.

+

Class organization: directions for grouping, what space to use, what order to perform, homework, and so forth.

TECHNIQUE FOR RECORDING

The multidimensional category system is comprised of The Cognitive Domain, The Affective Domain, The Kinetic-kinesthetic Domain, and The Technical Dimension. The system was developed to describe teacher-student verbal and nonverbal behaviors in choreography class. The recording technique developed for the system provided for coding simultaneous teacher-student verbal and nonverbal behaviors as they occurred simultaneously in any of the Domains or in The Technical Dimension.

The recording technique was developed as an integral part of the category system to insure effective application of the system. The complexity of the system itself, and the multiple activities which occur in a choreography class, made it necessary to develop symbols to record identified behaviors quickly. The recording technique also provided a means to preserve the sequence of behaviors, and to acknowledge the technical aspects of videotaped materials and the organization of choreography class. All coding was done from the viewpoint of the observer and what he could see and hear in the playback of the videotaped lessons.

Training the judges in the use of the category system was preliminary to the estimation of the reliability, objectivity, and construct validity of the system. Instructions applicable to the general conduct of coding were supplemented by directions specific to each Domain.

General Instructions

It is the purpose of this study to develop a procedure for systematically describing the teacher-student verbal and nonverbal interaction in the teaching of choreography.

Behavior will be coded while viewing video tapes, and will be coded in the following ways:

1. Teacher behavior is identified by the symbol T; Student behavior is identified by the symbol S.

2. Verbal behavior is identified by the symbol V; Nonverbal behavior is identified by the symbol NV. It is possible for verbal and nonverbal behavior to occur simultaneously within the same person.

3. The Domain(s) in which behavior occurs is identified by the symbol C for Cognitive Domain; A for Affective Domain; K for Kinetic-kinesthetic Domain.

4. The individual category which best represents the observed behavior is identified using the appropriate coding symbol. Example: Affective Domain, dissatisfaction - A2f.

5. Technical inadequacies in the audio or video portion of the videotape recording, and a situation which no other category defines exclusively is identified by the symbol X.

6. Class confusion with no obvious productive classwork is identified by the symbol /.

7. Matters of class organization such as homework assignments, organizing people into groups for classwork, directions for use of the available space, and the like are identified by the symbol +.

8. Behaviors are recorded in vertical sequence downward on the coding sheet provided.
   Example: Teacher Verbal Cognitive Analysis
   Student Nonverbal Kinetic-kinesthetic Imitation
   Student Verbal Affective Evaluation based on Internal Criteria-opinion
   TVC3
   SNVK2
   SVA3a

Move to the next block on the coding sheet at the audible tapping or sharp clicking sound every 15 seconds.

Behaviors that are the same and continue on into additional 15 second blocks are recorded by complete identification and recording of the behavior the initial time, followed by repetition of the identifying teacher (T) or student (S) and a dash as the same behavior is continued.
Example: Student Nonverbal Kinetic-kinesthetic
Full-out Performance
Continues
SNVK8b

_____ = end of one 15 second block

S----------

9. Simultaneous behaviors by different people are recorded on separate lines and bracketed with a <.
Example: Teacher Verbal Cognitive Analysis
and simultaneous Student Nonverbal
Affective Respond-receptive
< TVC3
SNVA2a

10. Simultaneous behaviors within the same person are identified by the appropriate coding symbols with one behavior divided from another by a comma.
Example: Student Nonverbal Kinetic-kinesthetic
Full-out Performance, and Affective
Congruent
SNVK8b, A2c

11. At the beginning of each tape the teacher will be identified for you. As group work occurs, such as might occur in Improvisation, the individual student you should be following will be identified.

12. Each tape will be played only once.

Specific Instructions

Word cues that indicate specific categories, and nonverbal action that may be associated with a particular category are identified below. Examples of each are provided. The cues will be presented Domain by Domain.

Cognitive Domain:

1. Verbal response is the usual Cognitive behavior.

2. Analysis of observed movement, or that movement which you personally performed is usually associated with Cognitive Analysis (C3).

   "What were the three different speeds used, and where in the body did you see them?"

3. Unless cognitive evaluation can be identified clearly as quantitative (C6b) or qualitative (C6c), it is coded as Evaluation Based on External Criteria-Pre-Set Standards (C6a).

   "Did she solve the problem? (after observing a study)
   or
   "It's got to be done with more strength-depth."

4. Evaluation following an observation of a dance phrase or piece indicating quality, confidence and other performance details is coded as Evaluation Based on External Criteria-Pre-Set Standards (C6a).

   "Look strong, look confident."

Affective Domain:

1. Behavior indicating minimal involvement of an individual and "just being there" is coded as Attend-Receptive (A1a).

2. Facial expression alone, not total body involvement is coded as Attend-Puzzlement or Query (A1b).

3. Behavior indicating interest in the classwork is coded as Respond-Receptive (A2a).

4. Gestures that are supportive of the verbalization are coded as Respond-Congruent (A2c). These gestures are not considered a demonstration of movements, consequently are not coded as Kinetic-kinesthetic Performance-Marking (K8a).

5. Verbal support, such as "keep on, keep working" is only coded as Affective Verbal Respond Satisfaction (AV2e).

6. A verbal cue of "feel" is coded as Evaluation Based on Internal Criteria-Kinesthetic (A3b).

   "It feels right; it feels good."

Kinetic-kinesthetic:

1. When the individual behavior is both Cognitive and Kinetic-kinesthetic at the same time, the movement aspect takes precedence and it is coded as Repetition (K1).

   Individual moves and speaks simultaneously cueing a movement pattern, "walk-turn."

2. Verbalization that is descriptive about the directions, body parts to be used, quality of movement, and so forth, without accompanying movement demonstration or supportive gestures indicating the movements, is coded as Imitation (K2).

   "Three-step turn and jump." Just verbal instruction.

3. When there is no indication of group relationship in the problem structured by the teacher or student, it is coded as Independent Structured Improvisation (K5b).

   "Let's try some things using a direct pathway, using percussive quality."

4. A demonstration, considered a completed action or performance, is coded as Performance-Full-out (K8b).

5. Incomplete form and action is coded as Performance-Marking (K8a). "Blocking" is always coded as (K8a).

SUMMARY

Chapter III presented the rationale underlying the category system, the category system itself, and the recording technique necessary for the use of the category system.

The rationale included the theoretical considerations of the components of the choreographic process, and the unity of man as it relates to dance. The multidimensional features of the

system were examined as derived from the literature in dance and descriptive-analytic research. Process functions were identified for The Kinetic-kinesthetic Domain specifically, as were thought processes associated with The Cognitive Domain, and feelings, attitudes, and values considered a part of The Affective Domain. The interrelationship among the Domains was indicated as affected by the organizing principles selected and applied to each Domain.

The Cognitive Domain, The Affective Domain, The Kinetic-kinesthetic Domain, and The Technical Dimension of the category system were presented with operational definitions and examples of each category.

The recording techniques necessary for using the system were presented. General instructions for the overall use of the system were indicated first, followed by instructions specific to each Domain.

Chapter IV presents the procedures used in estimating the reliability, objectivity, and validity of the system.

CHAPTER IV

PROCEDURES

The purpose of this study was to develop a procedure for systematically describing teacher-student verbal and nonverbal interaction in the teaching of choreography. The rationale underlying the category system, the category system itself, and the recording technique necessary for use of the system were presented in Chapter III.

The purpose of this chapter is to present the procedures used to estimate the reliability, objectivity, and validity of the system. The procedures are examined in two parts. Collection of data is presented first, and includes selection of teachers and classes, videotape recording procedures, and procedures for the final coding sessions. The statistical techniques employed in estimating the reliability, objectivity, and validity of the category system will conclude this chapter.

COLLECTION OF DATA

Selection of Teachers and Classes

Four teachers were selected for videotaping based on three criteria. Each teacher had to have earned a master's degree with a concentration in dance. In addition, participation in at least one summer workshop in technique or composition within the last

five years was required of each teacher. Finally, a minimum of two years teaching experience was considered necessary in affiliation with a college dance program in which technique and composition classes are organized according to ability levels.

The major criteria used for selection of classes to be videotaped were: the class focus must be on technique and composition organized according to ability level; the dance class must be a part of a continuing unit of instruction, and the time of class meetings at respective institutions must facilitate an appropriate videotaping schedule.

Procedures for Videotaping Classes

Equipment. The equipment used was a Sony camera, model AVC 3200 with lens No. 11090, wide angle Cosmicar 12.5 mm, 1.19 zoom television, f=16-64 mm, 1:2. A Sony monitor television receiver, model CVM-9200 with a 10-inch screen was used during videotaping, and a Sony monitor television receiver with a 21-inch screen was used during training and recording sessions. The equipment used was the property of The University of North Carolina at Greensboro, School of Health, Physical Education and Recreation.

Criteria for videotaping. Four criteria were met in taping the selected teachers and their classes:

1. The portable videotape equipment, operated by the investigator for taping for this study, must be available for the necessary training, taping, and recording sessions throughout the study.

2. The artificial or natural light in the room must be of sufficient intensity to allow for sharp definition of all class participants being taped.

3. The placement of microphones in different parts of the studio must provide for a clear recording of verbal interaction throughout the room.

4. The placement and operation of the videotape equipment must not interfere with the general class working space nor interrupt normal class procedures.

Taping technique. The investigator transported all videotape equipment to the place of taping, and returned it in the same day to The University of North Carolina at Greensboro, School of Health, Physical Education and Recreation.

Two microphones were placed in different parts of the room. When possible, both microphones were suspended from ceiling fixtures. In one class setting both microphones were fastened to the top of portable volleyball standards located on opposite sides of the general teaching space. In other rooms microphones were placed around the periphery of the class working space by securing them to pipes, barres, and music racks.

The camera was placed near one corner of the studio to enable filming large group activity. Every effort was made to avoid panning the class when small groups, working independently, were scattered throughout the room. Instead, the view of the observer was narrowed by shifting the focus of the camera to a specific group. Shifting to a specific group was done to make it

easier to see detail, and to help identify specific individuals to be observed.

In order to obtain a representative sampling of teacher-student verbal and nonverbal interaction in a choreography class, the assumption was made that each lesson has a beginning section, a middle section, and an ending section. The length of each section was determined arithmetically by dividing the total class period length by three. Thus, a section for a regular 50 minute class was 16 minutes, a 75 minute class was 25 minutes, and a 90 minute class was 30 minutes. The first portion of the class period was identified as the beginning section; the second portion was designated as the middle section; and the third portion of the class was determined as the ending section. Continuous video-taping was done during the randomly selected class interval at each taping session. This procedure was applied to each of the three lessons for every teacher.

Taping schedule. Each of the four teachers selected were taped on three different dates over a seven-week period of time. These dates were selected randomly within the limitations of each teacher's scheduling commitments as well as travel time restrictions of the investigator. The taping schedule for the 12 lessons is shown in Table 1, page 137.

Selection and Training of Judges

Four graduate students served as judges in the use of the category system prepared especially for this study. The criteria

Table 1

Taping Schedule

Teacher	Class Time	Date	Section	Date	Section	Date	Section
1	1:00-2:00 p.m.	3/22	3	4/12	1	4/26	3
2	4:00-5:30 p.m.	4/10	1	4/24	3	5/1	1
3	2:00-3:00 p.m.	3/23	1	4/20	3	4/25	2
4	4:30-5:45 p.m.	3/20	2	4/3	1	4/17	3

for acceptance as a judge were: expression of interest in the study of teacher behavior; willingness to make a time commitment of approximately 24 hours inclusive of training and final recording sessions; and full or part-time affiliation with The University of North Carolina at Greensboro as students or faculty. Of the four judges, two were full time graduate students in residence in Greensboro, and the remaining two were part-time graduate students living within a 51 mile radius of Greensboro. All of the judges had undergraduate professional preparation in physical education. None of the judges had any special training in choreography or dance.

Training sessions were scheduled between May 13, 1972 and June 13, 1972, each session lasting no less than 45 minutes and no more than two and a half hours. The total training time for the 10 sessions was 15 hours. The schedule for training and final coding, general instructions for use of the category system,

and the category system itself were given to each judge as orientation material prior to the first scheduled training session. The training schedule, including room designation and the length of each session is shown in Table 2, page 139.

Both audiotape recordings and videotape recording were used in training. Three audio tapes and nine video tapes were made especially for training. The training tapes were both 35 minutes and 50 minutes in length.

The general pattern used in training the judges was a verbal orientation to the categories for a specific Domain, followed by practice coding sessions for that Domain using the audio and video training tapes. Immediate feedback was provided by replaying short intervals of the training tape and discussing points of confusion. The Domains were studied in the following order: Kinetic-kinesthetic, Cognitive, and Affective.

The specific training sequence varied from Domain to Domain and was dependent upon the primary mode of behavior used in each Domain. The training for coding The Kinetic-kinesthetic Domain, emphasizing movement, began with study of only the video portion of the video tape. Later in the same training session, the audio level was turned up so that practice could be given in coding both verbal and nonverbal behaviors in the same Domain. Training for coding in The Cognitive Domain was done with an audio tape first, due to the more verbal nature of that Domain. Late in the same training session, a video tape was introduced and both verbal and nonverbal behaviors were recorded

Table 2

Training Schedule for Judges

Date	Place	Time
May 13, 1972	Audio visual room and dance studio	9:30-12:00 noon
May 17, 1972	Audio visual room	5:00-6:00 p.m.
May 19, 1972	Audio visual room	4:00-6:00 p.m.
May 23, 1972	Audio visual room	4:00-5:30 p.m.
May 25, 1972	Audio visual room	4:00-6:00 p.m.
May 30, 1972	Audio visual room	10:00-11:30 a.m. two judges 4:00-5:30 p.m. two judges
June 6, 1972	Audio visual room	1:00-2:30 p.m.
June 7, 1972	Audio visual room	1:15-2:00 p.m.
June 12, 1972	Audio visual room	4:30-5:45 p.m.
June 13, 1972	Audio visual room	4:30-5:30 p.m.

simultaneously in both The Kinetic-kinesthetic Domain and Cognitive Domain. Training for coding in The Affective Domain differed from the preceding Domains studied. Both verbal and nonverbal behaviors were coded from the video training tape immediately following the verbal orientation to The Affective Domain. The reason for this being that simultaneous coding of verbal and nonverbal behaviors in all three Domains was practiced after only a short period of training using The Affective Domain alone.

An objective in the training of the judges was to build endurance, as well as consistency and concentration. Intervals were selected arbitrarily for increasing continuous viewing and coding time from 30 seconds, to one minute, three minutes, five minutes, eight minutes, and 12 minutes. At the suggestion of the judges, the interval was then increased from 12 minutes to 20 minutes, and finally to 30 minutes, the actual length of time that they would be asked to code in the final recording sessions.

The judges were seated in chairs with tablet arms, in a single row, in front of the videotape monitor. They selected their own seating arrangement and remained in that order throughout the training and final coding sessions.

A special coding sheet was prepared for use during training and the final recording sessions. The sheet has been divided into 16 sections with four columns of four sections. Each section on the recording sheet represented one 15 second interval. The judges were trained to move on to the next time box in the prepared coding sheet in response to a 15 second timed interval audio tape. The audio tape, heard from a position directly behind the

four judges, was played simultaneously with video playback. The signal to change to the next time box was a sharp clacking sound every 15 seconds.

The maximum training hours were set at 16, based on the suggestions for training time made by Barrett (1969) in her multi-dimensional study. Prior to the final recording sessions, inter-judge agreement for all paired judges approximated 80 per cent. This was estimated using the percentage of agreement technique where the total number of observer agreements (X) was divided by the total number of observations made (Y), or $\frac{X}{Y}$ (Barrett, 1969:149; Howey, 1968:102).

Recording Sessions

The first recording session was June 15, 1972 from 5:00 p. m. until 9:00 p. m. Ten video tapes, randomly selected from the 12 tapes made of the four selected teachers were viewed and coded. The recording session took place in the audio visual room at The University of North Carolina at Greensboro, School of Health, Physical Education and Recreation. The equipment and seating arrangement was the same as used during the training sessions.

The order for viewing and coding of the 10 tapes was determined randomly. A break in coding was made after the fifth tape viewed, or 78 minutes of coding. The remaining five tapes, 95 minutes of coding, were completed after the break.

At the beginning of each tape the teacher was identified by the investigator. As the interaction changed, single students

to be observed were identified by the investigator. The selection of an individual student was based on the criterion that the dancer had a distinguishing ornamentation or design in his leotard, tights, or hairstyle. Identification of the student was made at the actual moment of taping. The purpose of identifying an individual on the tape was to insure that all judges observed and coded the same student's behavior at a given time.

All recording was done on prepared coding sheets. Each judge recorded his observations independent of every other judge. No conversation or discussion occurred during the entire recording session.

The second recording session was held June 23, 1972 from 4:30 p. m. to 8:30 p. m. in the same setting as the June 15, 1972 recording session. All 10 tapes, reordered by random selection, were viewed and coded. There was a break after the completion of Tape 4, or a total of 95 minutes. The second grouping of tapes viewed and coded simultaneously included Tapes 5 through 10, for a total of 78 minutes. The order of the tapes in the first and second recording sessions is shown in Table 3, page 143.

The data gathered from these recording sessions were used to estimate reliability, objectivity, and construct validity of the system.

STATISTICAL TECHNIQUES

The coded observations were treated statistically to estimate the reliability, objectivity, and construct validity of the

Table 3

Order of Tapes During Recording Sessions

June 15 Recording			June 23 Recording		
Order	Tape Date	Teacher	Order	Tape Date	Teacher
1	5/1	T2	1	5/1	T2
2	3/27	T4	2	4/25	T3
3	3/22	T1	3	4/12	T1
4	4/17	T4	4	4/24	T2
5	4/3	T4	5	5/4	T3
6	5/4	T3	6	4/3	T4
7	4/24	T2	7	3/22	T1
8	4/12	T1	8	4/26	T1
9	4/25	T3	9	4/17	T4
10	4/26	T1	10	3/27	T4

category system. Content validity was estimated by non-statistical techniques.

Reliability

Reliability ". . . is the tendency toward consistency by a given individual's repeated performance of one behavior (Safrit, 1973:125-126)." Two statistical techniques were used to estimate the reliability of the category system. Intrajudge agreement was tested by the Reliability Index (Bijou, 1969:195-200). The intraclass correlation coefficient was obtained through analysis of variance procedures (Safrit, 1973:134).

Intrajudge agreement was defined as the extent to which each judge agreed with himself on two different occasions coding the same tape. Tapes from the first recording session were paired with the same tapes from the second recording session. Data from each of the 10 tapes were treated according to the four major divisions of the category system: The Cognitive Domain, The Affective Domain, The Kinetic-kinesthetic Domain, and The Technical Dimension. Four subdivisions for each major division were identified as Teacher Verbal, Student Verbal, Teacher Nonverbal, and Student Nonverbal. The Reliability Index (Bijou, 1969:195-200), yielding a per cent of agreement score, was used to show the extent to which each judge agreed with himself for each of the four subdivisions in each major division on each of the 10 videotapes viewed on two different occasions.

The reliability coefficient (R), representing the intraclass correlation coefficient, was determined by analysis of

variance. Safrit (1973:134) explained the intraclass method of obtaining reliability in this way:

> The coefficient R represents a ratio of variance estimates that have been obtained through analysis of variance procedures through which it is possible to determine the amount of variance attributable to all measurable sources of variability.

The coefficient R ". . . is a measure of the relative homogeneity of the scores within the classes in relation to the total variation among all scores in the table (Safrit, 1973:135)." First, the combined scores of the four judges for all 10 tapes were grouped and treated to obtain the reliability coefficient (R) for each of the four subdivisions within each of the four major divisions of the category system, or a total of 16 R's. Second, the combined scores of the four judges for each of the 10 tapes were treated to show a reliability coefficient (R) for each of the four subdivisions within each of the four major divisions of the category system for each individual tape, or a total of 160 R's (Winer, 1971:283-289).

Objectivity

The extent to which each judge agreed with every other judge, or objectivity, was tested by the Reliability Index (Bijou, 1969:195-200). The formula for the Reliability Index was identical for obtaining the reliability and objectivity per cent of agreement scores. The difference was in how the scores were used. The scores of a single judge for both the first and second recording sessions were used for estimating reliability,

and the scores of paired judges for the same recording session for estimating objectivity. Data were grouped in two ways testing the objectivity first on the totals for all 10 tapes combined, and second on the extent to which every judge agreed with every other judge on the totals for each individual tape. A per cent of agreement (%) score was obtained for the four subdivisions (Teacher Verbal, Student Verbal, Teacher Nonverbal, Student Nonverbal) of each of the four major divisions of the category system (The Cognitive, Affective, Kinetic-kinesthetic Domains, and The Technical Dimension) for each of the ways in which data were grouped.

Construct Validity

Construct validity was estimated by answering the following questions: (1) are all behaviors defined by the system observed in videotaped lessons; and (2) can all the behaviors observed be categorized (Barrett, 1969:151)? The number of entries for all 10 tapes combined for each subdivision in each Domain was determined. Each category, in its respective Domain, was tested to discover the extent of its use in the category system. A per cent score was obtained by dividing the total entries for an individual category by the total entries for that Domain in each of the four subdivisions.

Content Validity

Content validity was estimated by determining the extent to which the content of the category system is representative

and comprehensive of the class situation or subject matter about which conclusions will be drawn (American Psychological Association, 1966:12).

A list of eight experts in the field of dance was compiled. These experts were chosen because they met the following criteria: (1) recognition as a leader in dance education as a writer, teacher or choreographer, and (2) recognition as a leader in dance education with experience teaching choreography. The descriptive material about the teacher-student verbal and nonverbal interaction in the context of the category system developed for this study was sent to the experts in October, 1972. They were requested to study the material and make a judgment as to its representativeness and comprehensiveness in the teaching of choreography. A subjective analysis of the experts' judgments was made in assessing content validity. This material was the basis for some minor changes made in the category system, but primarily served as suggestions for further study and discussion.

SUMMARY

Chapter IV presented the procedures necessary for estimating the reliability, objectivity, and validity of the category system developed for this study. The following procedures were described: collection of the data, and the statistical techniques used in treatment of these data.

CHAPTER V

PRESENTATION AND ANALYSIS OF DATA

The purpose of this study was to develop a procedure for systematically describing teacher-student verbal and nonverbal interaction in the teaching of choreography. The following questions served as guides for this study:

1. Can teacher-student verbal and nonverbal interaction in the teaching of choreography be systematically described?
2. Can observers be trained to use the category system reliably and objectively to identify teacher-student verbal and nonverbal interaction in the teaching of choreography?
3. Can a system for describing teacher-student verbal and nonverbal interaction in teaching choreography be developed that has construct and content validity?

Four judges, trained in the use of the category system, observed and coded 10 videotaped lessons. The coded observations were used as data, treated statistically, to estimate the reliability, objectivity, and construct validity of the category system. The statistical procedures were presented in Chapter IV. The data collected to determine the reliability, objectivity, and validity of the system will be presented and analyzed in this chapter. Reliability will be discussed first,

followed by objectivity. The final section will be the presentation and interpretation of construct and content validity.

RELIABILITY

Reliability is concerned with precision and consistency of measurement (Webb, 1968:4; Safrit, 1973:126). Webb (1968), in a study for improving reliability estimated for systematic classroom observations, noted that reliability may be viewed in two ways:

> Reliability can be considered as the variability of scores of a single individual due to errors in repeated measurement and reported in terms of the standard error of measurement in score points. A second approach to reporting the reliability of measurement can be made in terms of the variability of an individual's position; this is called a reliability coefficient (Webb, 1968:4).

The second approach has been selected as one means of testing the reliability of the category system for this study.

Different sources of error affect the reliability coefficient. Those identified by Webb (1968) were response variations of the subject, variations in the sample of behavior observed, variations in administration and scoring, and variations in the process of observation.

Abramson (1969:16) identified three methods of computing observer agreement or reliability used in teacher behavior studies: per cent of agreement (%), correlation coefficient (r), and analysis of variance (R). The focus has been on the reliability of the observer. Medley and Mitzel (1958, 1963) concluded that analysis of variance was superior to correlational analysis in determining a

single best estimate of reliability. Webb (1968:6) summarized the concept of reliability coefficient in this way:

> A single reliability coefficient can report only a single source of error variation. Accurate measurement demands a multiplicity of clearly defined reliability coefficients.

In this study, reliability was estimated using the analysis of variance technique (Winer, 1971:283-289) and the Reliability Index (Bijou, 1969:195-200). The reliability coefficients (R) obtained by analysis of variance will be presented and discussed first, followed by the intrajudge agreement measured by the Reliability Index (%).

Reliability Coefficient (R): Intraclass Agreement

The standard selected for an acceptable reliability coefficient using analysis of variance procedures was .78 or higher. The degree to which the judges are measuring the same thing, or shared variance, is 60 per cent when a reliability coefficient of .78 is squared. This means that 60 per cent of the variance of the scores is held in common (Safrit, 1973:154).

The selection of the somewhat low standard for the reliability coefficient (R) was a reflection of the lack of use in related studies (Ciesla, 1972; Webb, 1968; Galloway, 1962; Gasson, 1971) of any statistical technique consistently, the complexity of the category system, and the number of factors with which each observer had to deal in making coding decisions. The category system had four major divisions with an overall total of 34 categories: eight in The Cognitive Domain, 10 in the Affective Domain,

13 in The Kinetic-kinesthetic Domain, and three in The Technical Dimension. It was necessary that the observer, coding videotaped choreography lessons, identify: (1) the individual exhibiting the behavior (teacher or student), (2) the mode of behavior for each individual (verbal or nonverbal), (3) the division (Cognitive, Affective, Kinetic-kinesthetic, Technical) in which the behaviors were occurring, and (4) the specific categories within each domain that represented the behavior observed. Coding was continuous throughout each taped lesson so the observer was allowed no rest intervals. The continuity of coding, combined with the necessity of coding both student and teacher behavior simultaneously in both the verbal and the nonverbal mode using the large number of categories, made this category system very complex.

Three different types of agreement, shown in the tables that follow as **, .00, and negative coefficient, will be explained prior to interpretation and discussion of the data. Agreement of the judges that there were no behaviors observed to be recorded was shown as **. This was determined as perfect agreement, accomplished because there was no coding by any judge. No recordings by any judge were entered as zero (0) recordings numerically throughout all analysis of variance calculations. If agreement in coding nothing had been entered as a one (1) for each such agreement, the reliability coefficients would have been affected. For example, in Table 4, page 152, the reliability coefficient for Cognitive Student Nonverbal behavior of .00 would

Table 4

Reliability Coefficients (R) for Intraclass Agreement (10 Videotaped Lessons Coded by Four Judges)

Major Divisions	Major Subdivisions			
	Verbal		Nonverbal	
	Teacher	Student	Teacher	Student
Cognitive	.86	.94	**	.00
Affective	-.07	.58	.86	.94
Kinetic-kinesthetic	.72	.74	.72	.99
Technical	.81	.68	-.08	.00

** = No recordings made; considered 1.00 agreement.
.00 = Recording made by one or more judges with no recording by remaining judges; zero (0) agreement.
-.07, -.08 = Recording made by two or fewer judges; remaining judges code nothing.

become .79 if each agreement in coding nothing had been entered as a one (1). The decision was made to enter a zero (0) in the calculation to represent agreement recording nothing instead of the number one (1) because zero represented the actual number of recordings made and was considered a more accurate representation of the use of the individual categories within the system. However, perfect agreement in coding nothing by all judges could be recognized as testing the category system in another way. There was agreement that there was nothing to code, or that no category in a particular subdivision was representative of the behavior observed.

A zero coefficient (.00) indicated overall lack of agreement and was caused most frequently by a single judge coding

behavior while the remaining judges recorded nothing, entered as zero numerically. A negative coefficient may occur if two judges code behavior and two do not code anything. In either case, the zero or negative coefficient results from the numerical structure of the analysis of variance format.

Ten tapes combined. The variability of the position of the four judges combined in coding the 10 videotaped choreography lessons is shown in Table 4, page 152. The range of scores for intraclass correlation of from -.08 to 1.00 indicates great variety in the coding consistency of the judges for the 10 videotaped lessons combined. The greatest consistency was in The Cognitive Domain where only the student nonverbal score (.00) failed to meet the selected acceptable standard of .78. The least consistency was in The Technical Dimension where only the teacher verbal score of .81 met the acceptable standard.

The overview of reliability coefficients at .78 or higher for specific Domains in verbal and nonverbal behavioral modes may indicate the general clarity and weighting of the composition of the category system itself. Cognitive verbal (.86 to .94) and nonverbal teacher (1.00), Affective nonverbal (.86 to .94), Kinetic-kinesthetic nonverbal student (.99), and Technical verbal teacher (.81) reflect the tendency of the judges to be consistent for specific aspects of the category system. The Domains and behavioral modes showing the least consistency were Cognitive nonverbal student (.00), Affective verbal teacher and student (-.07, .58), and Technical nonverbal divisions (-.08, .00).

The cause of these very low reliability coefficients in the specific Domains may be explained, in part, by reviewing the primary nature of each major division of the category system. The Cognitive Domain clearly is more verbal in nature, making nonverbal behaviors more difficult to identify. Examination of the individual category definitions in The Affective Domain show only three categories that have verbal components clearly stated. Difficulty in identifying these Affective behaviors may indicate the need for more refinement of the category definitions. The Technical Dimension, designed as a coding facilitator, has as its primary purpose identification of organizational procedures within the class and technical-mechanical difficulties with equipment that make specific category selection impossible. The primary difficulty was the inability to hear the audio track clearly enough to make fine category discriminations possible. Thus, it was possible to identify only that verbal behavior was occurring, and whether the teacher or student was talking. The agreement of .81 for teacher verbal behavior in this division and .68 for student verbal behavior indicated that in the tapes coded the judges agreed about more teacher talk than they did about student verbalization. The low (-.08, .00) reliability coefficients for the nonverbal behaviors in The Technical Dimension may indicate that it was possible for the judges to place nonverbal behavior in specific categories within the remaining three divisions and that they found fewer instances of technical-mechanical difficulties in the nonverbal behavioral mode.

Although the reliability coefficients of .72 obtained in The Kinetic-kinesthetic Domain for teacher verbal and nonverbal behavior, and .74 for student verbal behavior were below the .78 standard, two things should be noted: (1) the consistent level of agreement among the judges for teacher verbal and nonverbal behavior (.72, .72) and student nonverbal behavior (.74), and (2) the high agreement attained among the judges for student nonverbal behavior (.99). The range of scores, .72 to .99, was the smallest compared with The Cognitive, Affective, and Technical divisions. This may be a reflection of the movement orientation background of each judge making a greater degree of consistency possible when verbal and nonverbal behaviors concerning movement are observed and coded.

Overall, the apparent strength of the category system lies in The Cognitive Domain for verbal behavior (.86, .94). The Affective Domain for nonverbal behavior (.86, .94), and The Kinetic-kinesthetic Domain for both verbal and nonverbal behavior (.72, .74, .72, .99). Other parts of the category system have coefficients that deviate markedly from the acceptable standard (.78).

Closer examination of the obtained reliability coefficients on individual tapes may clarify some of the reasons for the negative and very low scores in Table 4, page 152. The reliability coefficients obtained for individual tapes are shown in Table 5, page 156. This analysis continues to combine the scores of the four judges as was true in Table 4, page 152.

Table 5

Reliability Coefficients (R) for Intraclass Agreement
(Individual Videotaped Lessons Coded by Four Judges)

	Major Divisions															
	Cognitive				Affective				Kinetic-kinesthetic				Technical			
Tape	TV	SV	TNV	SNV	TV	SV	TNV	SNV	TV	SV	TNV	SNV	TV	SV	TNV	SNV
I	.82	.84	**	**	.53	.71	.93	.98	.70	.61	**	.78	.87	.69	.00	.00
II	.99	.95	**	**	-.23	-.26	.84	.94	.50	**	.77	.99	.97	.75	**	.00
III	.89	.85	**	**	.59	-.18	.93	.88	.83	-.14	.91	.96	.93	.81	**	**
IV	.94	.60	**	**	.42	**	.96	.86	-.43	-.14	**	.95	.83	.64	**	**
V	.97	.88	**	**	.76	.33	.79	.91	.80	**	-.17	.91	.78	.84	**	.00
VI	.91	.90	**	**	.73	.47	-.18	.87	.72	**	**	.94	.64	.93	**	.48
VII	.96	.98	**	**	.72	.66	.91	.91	.62	.83	.79	.98	.86	.91	**	**
VIII	.99	.93	**	-.22	.70	**	.97	.96	.84	-.14	.33	.96	.96	.91	.00	.00
IX	.97	.97	**	**	.53	.40	.91	.95	-.14	-.14	**	**	.97	.99	**	**
X	.99	.79	**	**	.85	-.18	.89	.99	.90	**	.78	.93	.85	.84	**	.00

TV = teacher verbal; SV = student verbal; TNV = teacher nonverbal; SNV = student nonverbal
** = no recordings made; considered 1.00 agreement
.00 = recording made by one or more judges with no recording by remaining judges; zero (0) agreement

Individual tapes. Estimating the reliability coefficient (R) for individual videotaped lessons was also studied by analysis of variance. Reliability coefficients were obtained representing teacher and student verbal and nonverbal behaviors for each major division of the category system for each tape. The scores presented in Table 5, page 156, will be studied in two ways: first, in relation to the composite reliability coefficients in Table 4, page 152, and second, in summary of all reliability coefficients by major division, according to verbal and nonverbal behavior. The order for discussion will be The Cognitive, Affective, Kinetic-kinesthetic, and Technical divisions.

1. Cognitive. The overall reliability coefficient for teacher verbal behavior was .86 in Table 4, page 152. Coefficients for each of the 10 tapes shown in Table 5, page 156, were consistently above the acceptable standard (.78). The consistency of coefficients for teacher verbal behavior was indicative of clarity in the use of this part of the category system.

The range of coefficients for each tape in Table 5, page 156, for student verbal behavior was .60 to .98, with only one coefficient below the acceptable standard. The overall coefficient for combined tapes was .94 in Table 4, page 152. This score seems to represent a higher degree of agreement than the range of coefficient in Table 5, page 156, can support. This may be explained by a wide range in the raw scores for some tapes by a single judge, and the way in which a low number of tallies is absorbed when all scores for the 10 tapes are combined.

Cognitive teacher nonverbal behavior was not recorded on any of the tapes. The ** in Table 5, page 156, for this division was supportive of the same coefficient (**) in Table 4, page 152. As discussed earlier, the ** was considered perfect agreement.

The composite coefficient for student nonverbal behavior in Table 4, page 152, was .00. The individual tape coefficients in Table 5, page 156, showed that behaviors were coded for Tape 8 alone. The negative score (-.22) indicated poor agreement among the judges. However, all other tapes in this subdivision had perfect agreement, as defined earlier in this section. The zero correlation coefficient in Table 4, page 152, was adversely influenced by the one negative coefficient because there was perfect agreement among the judges on nine of the 10 tapes.

2. Affective. The reliability coefficient from Table 4, page 152, for teacher verbal behavior in The Affective Domain was -.07. This represents very low shared variance when evaluated by squaring the coefficient. The range of scores for reliability coefficients for individual tapes shows variability in agreement of the judges combined. Coefficients range from -.23 to .85. Tape 10 (.85) was the single tape for which the coefficient was above the .78 standard. The negative coefficients for both Tables 4 and 5, pages 152 and 156 respectively, reflect large differences in the amount of coding done by each judge. Raw scores deviated up to 25 codings for a single tape; one judge coded nothing while another judge coded a total of 25 behaviors. The remaining judges made 11 and two codings

respectively for the same categories on the same tape. Similar patterns, not as extreme, were present for all coefficients below .70 in Table 5, page 156. The five tapes at .70 or above showed more consistency among as many as three of the four judges. Variation in agreement among the judges, because of inconsistency in the number of judges coding and in the number of categories coded for nine of the 10 tapes in Table 5, page 156, probably caused the negative reliability coefficient (-.07) for teacher verbal behavior in The Affective Domain in Table 4, page 152.

The low reliability coefficient (.58) for student verbal behavior in the Affective division was caused by coding variations similar to teacher verbal behavior in the same division. All negative coefficients for student behavior, Tapes 2, 3, and 10, were caused by three judges coding nothing and one judge recording from three to five codings in only three categories.

The high reliability coefficients for combined tapes in Table 4, page 152, for teacher nonverbal (.86) and student nonverbal (.94) behavior were supported by the range of coefficients for individual tapes in Table 5, page 156. The teacher nonverbal behavior coefficient was lowered by a negative coefficient (-.18), the only score below the .78 standard. All 10 coefficients for student nonverbal behavior in Table 5, page 156, were within the .84 to .99 range. The consistency of the coefficients for Affective nonverbal behavior was considered as additional support for this portion of the category system.

3. Kinetic-kinesthetic. The consistency of the judges in approaching the .78 standard for The Kinetic-kinesthetic Domain in three of four subdivisions was noted in an earlier discussion. The overall reliability coefficient for teacher verbal behavior was .72. Scanning the coefficients for individual tapes in Table 5, page 156, shows two negative scores and one at .50. The remaining seven tapes indicate consistency among the judges. Four scores are above the acceptable standard for this study, with the remaining three coefficients at .62, .70, and .72. The overall indication, considering the coefficients for individual tapes and reasons for the extreme scores, is toward consistency in the use of categories for coding teacher verbal behavior for the Kinetic-kinesthetic division.

Reliability coefficients for student verbal behavior for The Kinetic-kinesthetic Domain show a consistency in agreement that differs from teacher verbal behavior in two ways: there was consistency among the four judges in not recording any of the designated behaviors in four tapes, and four tapes had identical negative scores because only one judge used categories in coding behavior. The latter becomes a consistency factor, as do the no coding patterns, revealed in the analysis of variance .74 reliability coefficient in Table 4, page 152. The remaining two scores show consistency in actual use of categories in coding. The most influential factor in obtaining an overall reliability coefficient for student verbal behavior was the consistency of the judges in the relative non-use of this behavioral mode for eight of 10 tapes.

An overview of the individual coefficients for teacher nonverbal behavior in The Kinetic-kinesthetic division reflected inconsistency in coding. Perfect agreement (**) coding nothing was evident in four tapes. Three additional coefficients met the .78 standard, and the remaining tape coefficients were .77, .33, and -.17. The .72 reliability coefficient for teacher nonverbal behavior in The Kinetic-kinesthetic Domain in Table 4, page 152, seems to have been caused by a combination of agreement coding nothing and confusion in the use of the categories in this subdivision.

Student nonverbal behavior had a high composite coefficient in Table 4 (.99), page 152. The range of coefficients for individual tapes in Table 5 (.86 to .99), page 156, may be a reflection of the movement orientation of the judges.

4. Technical. Reliability coefficients for individual tapes for The Technical division in Table 5, page 156, indicated consistency in coding teacher verbal behavior with a range of .64 to .97. Nine of the 10 tapes had coefficients above the .78 standard. These coefficients were supportive of the .81 composite score in Table 4, page 152. The consistently high agreement in coding teacher verbal behavior in The Technical division reflected either the agreement that behaviors observed could not be categorized specifically in other Domains, or that there were technical audio and video difficulties that necessitated coding in this dimension.

Consistency in coding student verbal behavior by the judges was noted in Table 5, page 156. Their agreement was at or above the .78 standard in eight of 10 tapes. The difference in the number of codings made among judges was as high as 77 for Tape 1 and, 12 for Tape 4. This difference may have created the imbalance that resulted in the sub-standard coefficient for these two tapes. The differences in total codings mentioned above, as well as in two additional tapes of 25 and 12 coding differences respectively, may have lowered the overall reliability coefficient for student verbal behavior in The Technical division to .68, recorded in Table 4, page 152.

Table 4, page 152, showed a -.08 as the overall reliability coefficient for teacher nonverbal behavior in The Technical division. The two individual tapes having zero correlation in Table 5, page 156, for teacher nonverbal behavior were caused by a single judge making a low number of codings in one of three categories. No other judges coded any behavior and thus had perfect agreement coding nothing. The low amount of coding by an individual judge, and the small number of categories (3) used in this division caused an overall -.08 score. Fewer categories lowers the degrees of freedom applied in analysis of variance procedures.

The final reliability coefficient for Table 4, page 152, was a zero (.00) coefficient in the student nonverbal subdivision of The Technical dimension. Tapes 1, 2, 5, 6, 8, and

10 were the only tapes for which any behavior was coded. Tape 6, the only tape for which more than one judge coded behavior, had a coefficient of .48. All zero coefficients were caused by three of the four judges coding nothing, showing no agreement with the one judge who did code behavior. Four tapes reflected consistency of all judges in coding nothing. An overall view of this subdivision is that there was no consistent agreement coding specific behaviors among all judges.

Tables 6, 7, 8, and 9, pages 164, 165, 166 and 167 respectively, summarize intraclass agreement for individual tapes. The material is presented division by division, according to verbal and nonverbal subdivisions. The coefficients of all judges on the use of the category system for coding verbal and nonverbal behavior in respective divisions are combined in these tables.

Proportionately, very few coefficients are below the standard set. In The Cognitive Domain, 95 per cent of the coefficients for verbal and nonverbal behavior were above the .78 standard. In The Affective Domain, 15 per cent of the coefficients for verbal behavior were above the accepted standard, and 95 per cent of the coefficients for nonverbal behavior met the standard. Proportionately, more coefficients in The Kinetic-kinesthetic Domain for verbal behavior (55 per cent) than for nonverbal behavior (15 per cent) were below the .78 standard. The proportion of coefficients above the set standard for The Technical dimension was greater for the verbal (80 per cent) than for the nonverbal behavior (60 per cent).

Table 6

Summary: Reliability Coefficients for Intraclass Agreement for Individual Tapes in The Cognitive Domain

	Teacher			Student			Cumulative			Teacher			Student			Cumulative		
	v	%	c%	v	%	c%	v	%	c%	nv	%	c%	nv	%	c%	nv	%	c%
1.00										10	100	100	9	90	90	19	95	95
.92-.99	7	70	70	4	40	40	11	55	55									
.85-.91	2	20	90	3	30	70	5	25	80									
.78-.84	1	10	100	2	20	90	3	15	95									
.71-.77																		
.64-.70																		
.57-.63				1	10	100	1	5	100									
.50-.56																		
.43-.49																		
.36-.42																		
.29-.35																		
.22-.28																		
.15-.21																		
.08-.14																		
.01-.07																		
.00																		
-.07-.01																		
-.14-.08																		
-.21-.15																		
-.28-.22													1	10	100	1	5	100
-.35-.29																		
-.42-.36																		
-.49-.43																		
-.56-.50																		
-.63-.57																		
-.70-.64																		
-.77-.71																		
-.84-.78																		
-.91-.85																		
-.99-.92																		
-1.00																		
	N=10		100	N=10		100	N=20		100	N=10		100	N=10		100	N=20		100

v = verbal behavior; nv = nonverbal behavior; % = per cent; c% = cumulative per cent

Table 7

Summary: Reliability Coefficients for Intraclass Agreement for Individual Tapes in The Affective Domain

	Teacher			Student			Cumulative			Teacher			Student			Cumulative		
	v	%	c%	v	%	c%	v	%	c%	nv	%	c%	nv	%	c%	nv	%	c%
1.00				2	20	20	2	10	10									
.92-.99										4	40	40	5	50	50	9	45	45
.85-.91	1	10	10				1	5	15	3	30	70	5	50	100	8	40	85
.78-.84										2	20	90				2	10	95
.71-.77	3	30	40	1	10	30	4	20	35									
.64-.70	1	10	50	1	10	40	2	10	45									
.57-.63	1	10	60				1	5	50									
.50-.56	2	20	80				2	10	60									
.43-.49				1	10	50	1	5	65									
.36-.42	1	10	90	1	10	60	2	10	75									
.29-.35				1	10	70	1	5	80									
.22-.28																		
.15-.21																		
.08-.14																		
.01-.07																		
.00																		
-.07-.01																		
-.14-.08																		
-.21-.15				2	20	90	2	10	90	1	10	100				1	5	100
-.28-.22	1	10	100	1	10	100	2	10	100									
-.35-.29																		
-.42-.36																		
-.49-.43																		
-.56-.50																		
-.63-.57																		
-.70-.64																		
-.77-.71																		
-.84-.78																		
-.91-.85																		
-.99-.92																		
-1.00																		
	N=10		100	N=10		100	N=20		100	N=10		100	N=10		100	N=20		100

v = verbal behavior; nv = nonverbal behavior; % = per cent; c% = cumulative per cent

Table 8

Summary: Reliability Coefficients for Intraclass Agreement for Individual Tapes in The Kinetic-kinesthetic Domain

	Teacher			Student			Cumulative			Teacher			Student			Cumulative		
	v	%	c%	v	%	c%	v	%	c%	nv	%	c%	nv	%	c%	nv	%	c%
1.00				4	40	40	4	20	20	4	40	40	1	10	10	5	25	25
.92-.99													7	70	80	7	35	60
.85-.91	1	10	10				1	5	25	1	10	50	1	10	90	2	10	70
.78-.84	3	30	40	1	10	50	4	20	45	2	20	70	1	10	100	3	15	85
.71-.77	1	10	50				1	5	50	1	10	80				1	5	90
.64-.70	1	10	60				1	5	55									
.57-.63	1	10	70	1	10	60	2	10	65									
.50-.56	1	10	80				1	5	70									
.43-.49																		
.36-.42																		
.29-.35										1	10	90				1	5	95
.22-.28																		
.15-.21																		
.08-.14																		
.01-.07																		
.00																		
-.07-.01																		
-.14-.08	1	10	90	4	40	100	5	25	95									
-.21-.15										1	10	100				1	5	100
-.28-.22																		
-.35-.29																		
-.42-.36																		
-.49-.43	1	10	100				1	5	100									
-.56-.50																		
-.63-.57																		
-.70-.64																		
-.77-.71																		
-.84-.78																		
-.91-.85																		
-.99-.92																		
-1.00																		
	N=10		100	N=10		100	N=20		100	N=10		100	N=10		100	N=20		100

v = verbal behavior; nv = nonverbal behavior; % = per cent; c% = cumulative per cent

Table 9

Summary: Reliability Coefficients for Intraclass Agreement for Individual Tapes in The Technical Dimension

	Teacher			Student			Cumulative			Teacher			Student			Cumulative		
	v	%	c%	v	%	c%	v	%	c%	nv	%	c%	nv	%	c%	nv	%	c%
1.00										8	80	80	4	40	40	12	60	60
.92-.99	4	40	40	2	20	20	6	30	30									
.85-.91	3	30	70	2	20	40	5	25	55									
.78-.84	2	20	90	3	30	70	5	25	80									
.71-.77				1	10	80	1	5	85									
.64-.70	1	10	100	2	20	100	3	15	100									
.57-.63																		
.50-.56																		
.43-.49													1	10	50	1	5	65
.36-.42																		
.29-.35																		
.22-.28																		
.15-.21																		
.08-.14																		
.01-.07																		
.00										2	20	100	5	50	100	7	35	100
-.07-.01																		
-.14-.08																		
-.21-.15																		
-.28-.22																		
-.35-.29																		
-.42-.36																		
-.49-.43																		
-.56-.50																		
-.63-.57																		
-.70-.64																		
-.77-.71																		
-.84-.78																		
-.91-.85																		
-.99-.92																		
-1.00																		
	N=10		100	N=10		100	N=20		100	N=10		100	N=10		100	N=20		100

v = verbal behavior; nv = nonverbal behavior; % = per cent; c% = cumulative per cent

In summary, reliability in terms of intraclass agreement was tested using analysis of variance procedures. The standard set as acceptable was .78. The summary tables reflect intraclass agreement that is consistently high in nonverbal behavior for The Cognitive (95), Affective (95), and Kinetic-kinesthetic (85) Domains. Strongest intraclass agreement for verbal behavior is in The Cognitive (95) and Technical divisions (80). The results appear to reflect the basic framework of the category system with an emphasis on the nonverbal behavior for The Affective and Kinetic-kinesthetic Domains, and the more verbal thrust of The Cognitive Domain. The relatively high per cent of coefficients in both verbal and nonverbal behaviors for The Technical division seems to support the inclusion of this dimension in the category system.

Reliability Index: Intrajudge Agreement (%)

Each judge coded the same tape on two different occasions one week apart. The extent to which each judge agreed with himself was computed using the Reliability Index (Bijou, 1969:195-200). A percentage of agreement score was obtained using the formula in which the number of agreements is divided by the number of agreements plus the number of disagreements (Bijou, 1969:195). The consistency of each judge was tested for each of the 10 tapes in the four sub-divisions of the four major divisions of the category system.

The acceptable standard for reliability expressed as "percentage of agreement" (%), was 73 per cent for this study; scores

between 60 and 72 per cent were considered indicative of a positive direction. Selection of the standard was influenced by the results of Barrett's (1969) study. Barrett (1969:173) used 80 per cent of agreement as her standard with the range between 60 and 79 per cent considered suggestive of a positive direction indicating the need for further refinement of specific categories, changes in recording techniques, or additional training time for the observers. The intrajudge agreement for Barrett's (1969:174) study had percentages of agreement from 48 to 86 per cent.

In the present study, the individual judges showed an overall range in scores between zero (0) and 100 per cent agreement throughout the 34 subcategories. Every judge had scores that ranged from zero (0) to 100 per cent agreement. One hundred per cent agreement was achieved in two ways. First, the coding symbols used in the first and second recording sessions were identical in total number and in category selection. Second, the judge coded nothing in the first recording session in specific subdivisions for the major divisions of the category system and was consistent in making the same decisions during the second recording session. The double asterisk (**) throughout the tables reporting percentage of agreement indicated 100 per cent agreement created by no recording. Zero per cent agreement was caused when a judge coded behavior(s) in a specific subdivision in one recording session and coded no behavior in the same subdivision in the second recording session. A zero per cent agreement can be caused by coding as few as one or an unlimited number of behaviors.

The reliability for each judge will be analyzed independently based on the percentage of agreement scores. Reliability will be studied according to the major subdivisions in specific Domains, with identification of individual tapes with unusual reliability scores. The reliability performance of Judge A is presented in Table 10, page 171.

Judge A

1. Cognitive. The percentage of agreement scores for all 10 tapes for the verbal subdivision of The Cognitive division for Judge A ranged from 28 per cent to 96 per cent. Subdivided into teacher and student Cognitive verbal behavior, the range is noticeably smaller for the teacher behavior with scores between 45 and 96 per cent agreement. One tape was below 73 per cent standard (45 per cent) and all other scores were 74 per cent and above, reflecting consistency in coding in this aspect of The Cognitive Domain. The scores for the student verbal Cognitive behavior showed far less consistency with a low of 28 per cent and five of the 10 scores falling below 73 per cent agreement. However, a total of seven scores ranged upward from 62 per cent, indicating a positive direction for the reliability on seven out of 10 tapes for student verbal Cognitive behavior. Judge A scored the lowest for both teacher (45) and student (28) verbal Cognitive behavior on Tape 6. In the nonverbal mode, Cognitive Domain, 100 per cent agreement occurred for both teacher and student behavior for 19 out of 20 possibilities; the single

Table 10

Percentage of Intrajudge Agreement for Each Taped Lesson Viewed One Week Apart for Each Major Division for Each Behavior for Judge A (%)

	Major Divisions															
	Cognitive				Affective				Kinetic-kinesthetic				Technical			
Tape	TV	SV	TNV	SNV	TV	SV	TNV	SNV	TV	SV	TNV	SNV	TV	SV	TNV	SNV
1	90	43	**	**	00	00	82	59	40	77	**	93	98	51	**	94
2	81	62	**	**	00	**	69	46	53	**	**	91	70	48	**	80
3	74	88	**	**	44	**	84	40	71	00	74	92	69	95	00	**
4	79	73	**	**	**	**	71	18	00	**	**	71	67	73	**	**
5	87	53	**	**	00	00	79	27	47	**	00	86	00	28	**	**
6	45	28	**	**	83	80	**	61	00	**	**	70	00	50	**	**
7	87	64	**	**	00	69	67	72	**	71	00	97	53	96	00	**
8	96	94	**	00	100	**	88	95	40	00	**	84	87	91	**	**
9	87	82	**	**	67	44	93	68	**	**	**	**	87	67	**	**
10	84	73	**	**	84	00	92	95	74	**	**	83	40	73	**	00

TV = teacher verbal behavior; SV = student verbal behavior; TNV = teacher nonverbal behavior
SNV = student nonverbal behavior
** = no recordings made; considered 100 per cent agreement
00 = recording made at one session and no recording made at the other session; considered zero per cent agreement

exception of zero per cent reliability was for Tape 8 in the student nonverbal subdivision. The zero per cent agreement was caused by a single coding in the first recording session and no recording during the second session.

2. Affective. Agreement above the acceptable standard (73 per cent) was achieved by Judge A in four of 10 tapes in the teacher verbal mode. An equal number of zero agreements were obtained. These were caused by coding discrepancy as low as three and as high as 27 between the first and second recording sessions. Two 100 per cent agreements occurred; Tape 4, as agreement to code nothing (**), and Tape 8, as agreement coding with specific categories. The range of agreement scores (0 to 100 per cent) and their distribution above and below the set standard indicated confusion in the use of categories for teacher verbal behavior in The Affective Domain, or inability to hear the verbalizations clearly at each recording session.

Judge A had five agreement scores above the 73 per cent standard in the student verbal area. More consistency coding student verbal behavior than teacher verbal behavior seems reflected by the overall total of six scores within the range indicative of positive direction and above the set standard (60 to 100 per cent).

Scores for teacher nonverbal behavior were indicative of more consistency than for student nonverbal behavior. A total of seven scores were above the 73 per cent standard; the remaining three scores were above 67 per cent or within the range

indicative of a positive direction. Scores for student nonverbal behavior had a greater range (18 to 95 per cent) than for teacher nonverbal (67 to 93 per cent). Eight scores were below the acceptable level, indicating poor consistency. Judge A showed highest consistency for both verbal and nonverbal behaviors on Tape 8 and lowest reliability for Tape 5 for both behavioral modes.

3. Kinetic-kinesthetic. The reliability scores in The Kinetic-kinesthetic Domain for the nonverbal behavioral modes for both teacher and student show greater consistency than in the verbal modes. Only two of the 20 scores for nonverbal behavior show zero (0) per cent agreement. With two additional expections of 70 and 71 per cent, all other scores are above 73 per cent, or a total of 16 scores out of 20 can be said to have met the reliability standard.

Judge A reflected less reliability in the verbal modes with scores ranging from zero (0) to 100 per cent agreement for both teacher and student verbal behavior. In the verbal subdivision, more recordings were made for teacher behavior, compared with more recordings for student behavior in the nonverbal subdivision.

4. Technical. The verbal behavior for both teacher and student shows more coding than the nonverbal mode in the Technical division. Judge A made no codings (**) in eight of 10 tapes for teacher nonverbal behavior, and had zero (0) agreement

for the remaining two tapes. In the student nonverbal mode, no coding was made for seven of 10 tapes. Although the consistency in coding or not coding was very good in the nonverbal behavioral mode, Technical dimension, the scores for the verbal mode may have been a reflection of the double coding function of The Technical dimension. It may be recalled that judges were trained to code as Technical those behaviors that could not be identified specifically due to mechanical flaws, such as muffled sound track, as well as behaviors for which no representative category had been defined. Due to the high number of recordings in The Technical dimension, verbal subdivision, and based on viewing and hearing the 10 tapes during the recording sessions, the investigator has assumed that, in large part, the verbal subdivision has been used more frequently because of a somewhat muffled audio track. Less frequent recordings in the nonverbal mode may reflect clarity in the video portion of the tape and greater ease in coding nonverbal action due to training or past teaching experience.

The reliability of Judge A, as shown in Table 11, page 175, shows a composite of the percentage of agreement scores obtained for all 10 tapes in the verbal and nonverbal behavioral modes for each major division of the category system. Fifty-one per cent of the total scores in the verbal mode were at a level of 73 per cent or higher. Seventy-seven per cent of the total scores in the nonverbal mode met the acceptable standard for this study.

Judge A showed greater reliability in the nonverbal mode in two ways. First, the number of scores at the 100 per cent

Table 11

Summary: Reliability Index
Percentage of Agreement Scores for Judge A for
10 Tapes for Verbal and Nonverbal Behavior

Per Cent	v	%	c%	nv	%	c%
100	14	18	18	43	54	54
91-99	7	9	27	9	11	65
82-90	10	12	39	6	8	73
73-81	10	12	51	3	4	77
64-72	9	11	62	7	9	86
55-63	1	1	63	2	2	88
46-54	7	9	72	1	1	89
37-45	7	9	81	1	1	90
28-36	2	3	84			
19-27				1	1	91
10-18				1	1	92
1-9						
0	13	16	100	6	8	100
Total	80		100	80		100

v = verbal behavior
nv = nonverbal behavior
% = per cent
c% = cumulative per cent

agreement was markedly higher than in the verbal area. Second, the cumulative number of scores in the range between 73 and 100 per cent was greater for nonverbal (77 per cent) than for verbal (51 per cent).

Judge B. The percentage of intrajudge agreement for Judge B for each taped lesson viewed one week apart is shown in Table 12, page 177.

1. Cognitive. The range of percentage of agreement scores for the verbal behavioral mode in The Cognitive Domain was between 49 and 98 per cent. All scores for teacher verbal behavior were within the range indicating a positive direction, or higher than 60 per cent. Student verbal scores had a greater range with 49 per cent as the lowest score, and 98 per cent as the highest. Despite the lower score, only three of 10 scores were below 73 per cent agreement indicating higher reliability in recording student verbal behavior. One hundred per cent agreement was obtained for nonverbal behavior for teacher and student alike. This was perfect agreement because no codings were made at either recording session for either the student or the teacher. The high agreement for both verbal and nonverbal Cognitive behaviors reflected the ability of Judge B to code specific verbal Cognitive behaviors with greater consistency than any of the other judges.

2. Affective. The reliability for The Affective Domain had marked variability for both verbal and nonverbal modes.

Table 12

Percentage of Intrajudge Agreement for Each Taped Lesson Viewed One Week Apart for Each Major Division for Each Behavior for Judge B (%)

	Major Divisions															
	Cognitive				Affective				Kinetic-kinesthetic				Technical			
Tape	TV	SV	TNV	SNV	TV	SV	TNV	SNV	TV	SV	TNV	SNV	TV	SV	TNV	SNV
1	96	98	**	**	42	28	59	80	00	77	**	84	98	100	**	**
2	91	89	**	**	69	48	33	89	53	**	50	83	96	95	**	**
3	71	76	**	**	63	100	70	53	20	00	56	67	80	86	**	**
4	67	50	**	**	28	00	90	83	**	**	**	79	53	50	**	**
5	78	71	**	**	35	76	56	89	00	**	**	98	71	71	**	**
6	63	86	**	**	**	00	**	43	00	**	**	82	75	86	**	**
7	71	88	**	**	20	48	89	55	**	00	67	80	41	100	**	00
8	91	49	**	**	63	00	93	89	100	**	00	87	64	36	00	00
9	85	89	**	**	33	19	45	37	00	**	**	00	74	**	**	**
10	78	74	**	**	42	00	70	95	58	**	50	82	83	**	**	**

TV = teacher verbal behavior; SV = student verbal behavior; TNV = teacher nonverbal behavior; SNV = student nonverbal behavior

** = no recordings made; considered 100 per cent agreement

00 = recording made at one session and no recording made at the other session; considered zero per cent agreement

Judge B had only three scores that met the 73 per cent standard for this study for use with the Reliability Index: one in teacher verbal behavior and two for student verbal behavior. Very high or very low reliability for both verbal and nonverbal behavior was not obtained on any single tape. It may be concluded, tentatively, that Judge B had low reliability overall for The Affective Domain due to one or several of the following reasons: lack of precision in the category definitions as related to verbal behavior, not enough training time, poor training materials, or because category definitions seemed more representative of student verbal behaviors.

3. Kinetic-kinesthetic. Reliability for The Kinetic-kinesthetic Domain varied less than for The Affective Domain. The most consistency was reported for nonverbal student behavior. Both Judge A and Judge B showed consistency in coding nothing in the verbal behavioral mode and coding specific categories for nonverbal behavior. A lack of consistency for recording verbal and nonverbal behavior in all but Tapes 3 and 4 is the strongest conclusion to be drawn about the overall performance of Judge B in The Kinetic-kinesthetic division.

4. Technical. The pattern for The Technical dimension showing high consistency because of perfect agreement in coding nothing (**) in the nonverbal subdivision, and coding using specific categories in the verbal subdivision is apparent for Judge B. Seventeen of 20 agreement scores for the nonverbal mode were 100 per cent agreement due to coding nothing (**).

Overall agreement scores above the 73 per cent standard were achieved for 13 of the 20 tapes by Judge B in the verbal mode. Support for the verbal-nonverbal pattern may be derived from the dual coding function of The Technical dimension; that is, identification of behaviors for which no category had been defined, and for poor quality audio or video playback.

The reliability of Judge B has been summarized in Table 13, page 180. Fifty per cent of the total scores in the verbal mode were at 73 per cent or higher agreement. Seventy-five per cent of the total scores in the nonverbal mode met the standard accepted for this study. Judge B showed higher reliability in the nonverbal mode. This was also true for Judge A.

Judge C. The reliability performance of Judge C is reported in Table 14, page 181.

1. Cognitive. The total range of scores for the verbal subdivision of The Cognitive Domain was zero (0) to 95 per cent, showing wide variation in percentage of agreement attained. The range for teacher verbal behavior shows reliability attained for nine of the 10 tapes. The range for student Cognitive verbal behavior, between zero (0) and 95 per cent agreement, is not as weak as the range may indicate. Only three of 10 scores failed to meet the reliability standard set for this study.

Perfect agreement, due to no coding (**), was reached in both the student and teacher nonverbal behaviors for The Cognitive division. This may be interpreted to mean that Judge C exercised precise discrimination in deciding that no category

Table 13

Summary: Reliability Index
Percentage of Agreement Scores for Judge B for
10 Tapes for Verbal and Nonverbal Behavior

Per Cent	v	%	c%	nv	%	c%
100	16	20	20	43	54	54
91-99	7	9	29	3	4	58
82-90	8	10	39	12	15	73
73-81	9	11	50	2	2	75
64-72	8	10	60	4	5	80
55-63	4	5	65	4	5	85
46-54	7	9	74	3	4	89
37-45	3	4	78	3	4	93
28-36	5	6	84	1	1	94
19-27	3	3	87			
10-18						
1-9						
0	10	13	100	5	6	100
Total	80		100	80		100

v = verbal behavior
nv = nonverbal behavior
% = per cent
c% = cumulative per cent

Table 14

Percentage of Intrajudge Agreement for Each Taped Lesson Viewed One Week Apart for Each Major Division for Each Behavior for Judge C (%)

	Major Divisions															
	Cognitive				Affective				Kinetic-kinesthetic				Technical			
Tape	TV	SV	TNV	SNV	TV	SV	TNV	SNV	TV	SV	TNV	SNV	TV	SV	TNV	SNV
1	74	93	**	**	00	00	89	80	60	85	00	86	80	85	00	**
2	84	74	**	81	00	00	90	81	80	**	50	92	75	50	**	**
3	93	54	**	**	**	**	98	89	87	**	75	88	87	54	**	00
4	89	00	**	**	00	**	81	90	44	00	**	74	67	00	**	**
5	75	77	**	**	00	**	60	69	69	**	00	71	26	00	**	59
6	56	73	**	**	00	**	00	62	00	**	**	78	67	57	**	67
7	91	94	**	**	00	00	28	81	00	93	50	95	61	87	**	**
8	81	81	**	**	100	**	79	85	22	**	17	74	52	46	**	00
9	86	95	**	**	**	00	58	86	**	00	**	**	89	00	**	**
10	89	61	**	**	00	**	71	87	91	**	100	86	55	31	**	**

TV = teacher verbal behavior; SV = student verbal behavior; TNV = teacher nonverbal behavior; SNV = student nonverbal behavior

** = no recordings made; considered 100 per cent agreement

00 = recording made at one session and no recording made at the other session; considered zero per cent agreement

in The Cognitive Domain was activited in terms of nonverbal behavior.

2. Affective. The Affective Domain scores reflect an interesting counterbalance to The Cognitive Domain. Only one of 20 agreement scores for the verbal subdivision was at 100 per cent by coding specific behaviors. The eight additional perfect agreement scores were obtained by coding nothing (**). In contrast, no scores for the nonverbal mode reflected agreement coding nothing (**). The latter parallels the verbal activity in The Cognitive Domain. More specifically, Judge C had seven of 10 agreement scores for teacher nonverbal behavior between 60 and 98 per cent, showing promise of attaining reliability in this mode. All 10 agreement scores for student nonverbal behavior were between 62 and 90 per cent and all but two scores of these were at 80 per cent agreement or above. This indicated more reliability in discriminating nonverbal student actions for Judge C.

3. Kinetic-kinesthetic. The reliability for The Kinetic-kinesthetic Domain shows only one pattern. All scores for student nonverbal behavior lie within the range indicating positive direction and acceptable reliability (60 to 100 per cent). Judge C obtained agreement scores above the 73 per cent standard for five of the 10 tapes for teacher nonverbal behavior. It is interesting to note that four of these five acceptable scores were due to perfect agreement coding nothing (**), while only one of the 10 scores for student nonverbal behavior was a

perfect agreement coding nothing. This reflects more overall clarity in the application of specific categories for nonverbal student behavior.

Judge C had agreement scores for teacher verbal behavior considered in the range indicating positive direction and above for six of the 10 tapes. Overall, the scores for teacher verbal behavior may indicate lack of clarity in the precision of definitions for this Domain. Although the overall reliability for Judge C is higher for student verbal behavior (eight of 10 scores at 85 per cent and higher), this was achieved primarily by perfect agreement coding nothing (**) for six tapes as opposed to coding specific behaviors. This may be viewed in two ways: (1) it is supportive of the minimum number of categories defined to include specific verbal behaviors, and (2) student behavior was exhibited in another subdivision of this Domain and was identified by specific category coding with consistency (student nonverbal).

4. Technical. Examination of the overall pattern for scores in The Technical dimension shows more actual coding of specific categories for the verbal mode than the nonverbal mode. However, the reliability was greater in the nonverbal mode for Judge C with 15 perfect agreements out of 20. Fourteen of 20 agreements for the verbal mode were below the acceptable standard set. All agreement scores for verbal behavior reflected attempts to code specific parts of the observed behaviors. This may be related to the way in which The Technical division was structured to include inaudible behaviors and unidentifiable behaviors.

A summary of the reliability for Judge C is presented in Table 15, page 185. More consistency was shown in the nonverbal behavioral mode with 77 per cent of the total scores above the standard set as acceptable for this study. Only 53 per cent of the total verbal scores were above the acceptable standard. Before even a tentative conclusion can be drawn about the apparent high reliability for nonverbal behavior, the degree to which individual categories were coded needs examination. The high number of perfect agreements coding nothing (**), 35 of the total 40 scores in Table 14, page 181, shows discriminating judgment, perhaps of a different nature from that used when selecting categories consistently. The category by category examination within the construct validity discussion later in this chapter may give a clearer view of the overall reliability of the system.

Judge D. The scores reflecting the consistency of Judge D are represented in Table 16, page 186.

1. Cognitive. Judge D had scores in the range from zero (0) to 91 per cent agreement coding verbal behavior. More consistently high agreement was apparent in the nonverbal mode with eight 100 per cent agreement scores coding nothing (**), and two zero (0) agreements.

Overall, 17 of 20 agreement scores for verbal behavior were within a range between 60 and 91 per cent. Only four of these 17 scores were in the range between 60 and 72 per cent, indicative of positive direction. Although Judge D did not

Table 15

Summary: Reliability Index
Percentage of Agreement Scores for Judge C for
10 Tapes for Verbal and Nonverbal Behavior

Per Cent	v	%	c%	nv	%	c%
100	16	20	20	40	50	50
91-99	7	9	29	3	4	54
82-90	10	12	41	10	12	66
73-81	10	12	53	9	11	77
64-72	3	4	57	4	5	82
56-63	6	8	65	5	5	87
44-54	5	6	71	2	3	90
37-45	1	1	72			
28-36	1	1	73	1	1	91
19-27	2	3	76			
10-18				1	1	92
1-9						
0	19	24	100	6	8	100
Total	80		100	80		100

v = verbal behavior
nv = nonverbal behavior
% = per cent
c% = cumulative per cent

Table 16

Percentage of Intrajudge Agreement for Each Taped Lesson Viewed One Week Apart for Each Major Division for Each Behavior for Judge D (%)

	Major Divisions															
	Cognitive				Affective				Kinetic-kinesthetic				Technical			
Tape	TV	SV	TNV	SNV	TV	SV	TNV	SNV	TV	SV	TNV	SNV	TV	SV	TNV	SNV
1	16	43	**	**	00	00	87	74	00	67	**	72	16	06	**	**
2	89	79	**	**	**	**	50	89	80	**	86	81	97	33	**	**
3	74	80	**	**	86	**	61	90	91	**	61	94	69	00	**	**
4	65	00	00	**	**	**	70	80	**	**	**	94	46	**	**	**
5	72	70	**	**	50	**	59	71	00	**	**	75	85	86	**	**
6	73	70	**	**	67	00	**	76	**	**	**	72	00	86	**	00
7	80	83	**	00	**	76	86	69	00	00	00	83	69	87	**	**
8	85	91	**	**	00	**	74	93	00	**	00	80	67	100	**	**
9	89	80	**	00	00	**	85	99	00	**	**	**	85	93	**	**
10	77	80	00	**	28	**	75	**	27	**	50	94	59	91	**	**

TV = teacher verbal behavior; SV = student verbal behavior; TNV = teacher nonverbal behavior; SNV = student nonverbal behavior

** = no recordings made; considered 100 per cent agreement

00 = recording made at one session and no recording made at the other session; considered zero per cent agreement

perform with extremely high reliability, consistency was evident in the 14 scores with the range of 73 and 91 per cent. The tentative conclusion is that Judge D might achieve higher reliability scores with more practice in coding both student and teacher verbal behavior.

2. Affective. The scores for The Affective Domain reflected more use of categories for coding the nonverbal mode than for the verbal mode. The consistency shown for verbal behavior was noted by 10 of the 20 scores having perfect agreement attained by precision in coding nothing (**) at either session. The imbalance between verbal and nonverbal coding for The Affective Domain may be caused by the nonverbal nature of the Domain itself, with only three categories having specifically stated verbal components.

3. Kinetic-kinesthetic. The coding activity of Judge D for the student nonverbal mode in The Kinetic-kinesthetic Domain was greater and showed more reliability than in any other subdivision. All scores were at 72 per cent agreement or above. Scores for five of the 10 tapes for teacher nonverbal behavior were above the standard of 73 per cent agreement. Consistency was more evident in coding student verbal than for teacher verbal behavior.

4. Technical. A distinct pattern of coding was apparent for Judge D in verbal and nonverbal modes respectively. Reliability was indicated in scores for student verbal behavior. Seven of 10 scores showed agreement of 86 per cent and above.

The summary of the reliability of Judge D according to verbal and nonverbal behavior of the 10 tapes combined is shown in Table 17, page 189. Reliability was achieved for 79 per cent of the total scores for nonverbal behavior and for 58 per cent of the total scores for verbal behavior. This seems to reinforce the apparent clarity in coding nonverbal behavior in all divisions, and points out the existence of some confusion in coding verbal behavior.

The Reliability Index (%) scores of every judge have been summarized in two ways in Figure 7, page 190: (1) overall reliability according to each major division in the category system, and (2) overall reliability in the verbal and nonverbal behavioral modes. Table 10, page 171, Table 11, page 175, Table 12, page 177, Table 13, page 180, Table 14, page 181, Table 15, page 185, Table 16, page 186, and Table 17, page 189 were the source for cumulative per cent scores used in Figure 7, page 190. Scores for each judge were tallied in respective categories. The cumulative per cent of those tallies above the accepted standard (73 per cent) for the Reliability Index was determined.

Studied by major divisions, the combined judges had the highest overall cumulative per cent agreement in The Cognitive Domain and showed less reliability overall in the remaining divisions. Individually, no judge had cumulative scores above 73 per cent in all four divisions. It is difficult to summarize the performance of each judge because each had cumulative scores that fluctuated in more than one division. Judge D had cumulative

Table 17

Summary: Reliability Index
Percentage of Agreement Scores for Judge D for
10 Tapes for Verbal and Nonverbal Behavior

Per Cent	v	%	c%	nv	%	c%
100	22	28	28	42	52	52
91-99	5	6	34	6	8	60
82-90	10	12	46	7	9	69
73-81	10	12	58	8	10	79
64-72	9	11	69	5	6	85
56-63	1	1	70	3	4	89
44-54	2	3	73	2	2	91
37-45	1	1	74			
28-36	2	3	77			
19-27	1	1	78			
10-18	2	3	81			
1-9	1	1	82			
0	14	18	100	7	9	100
Total	80		100	80		100

v = verbal behavior
nv = nonverbal behavior
% = per cent
c% = cumulative per cent

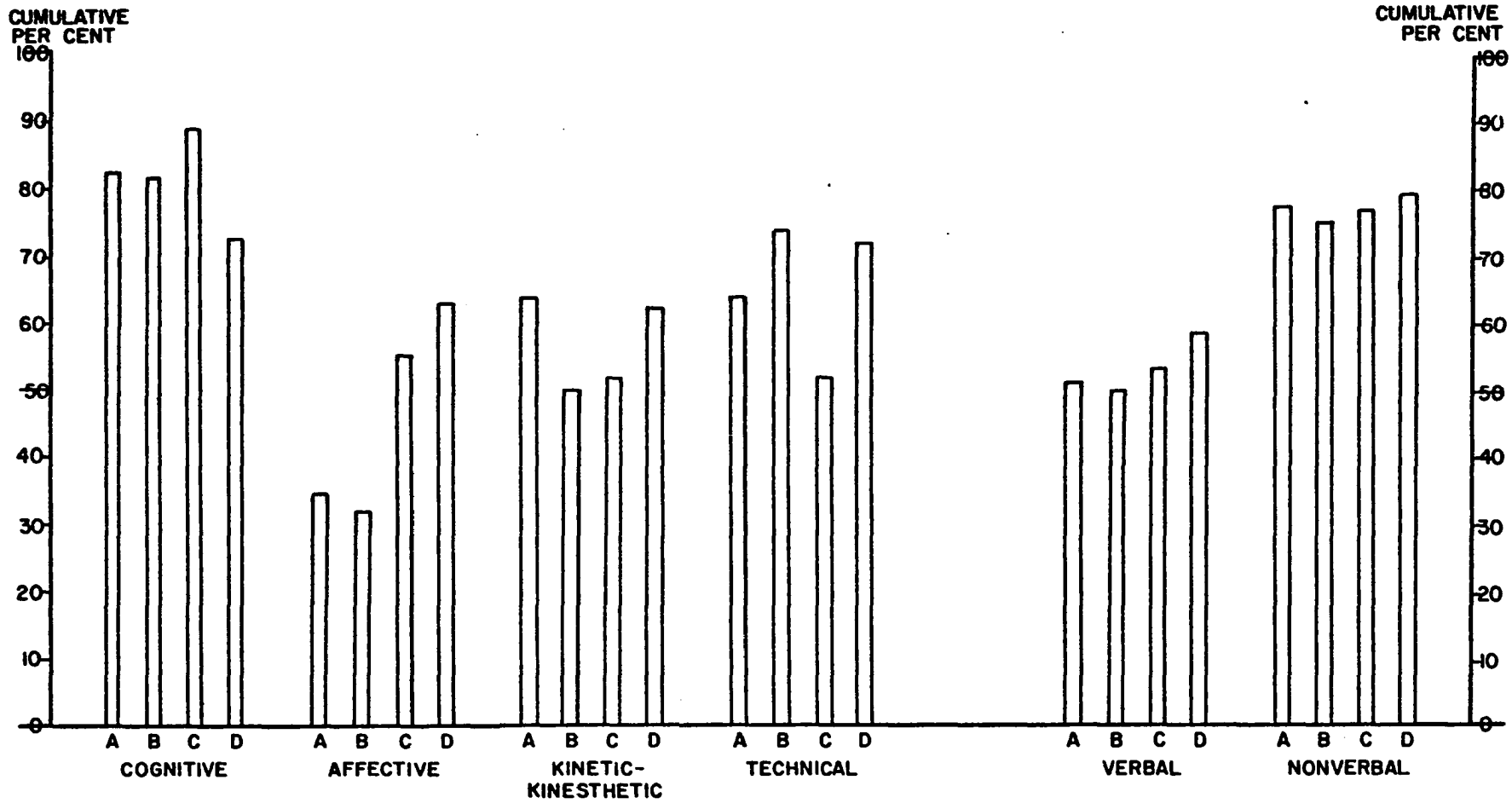

Figure 7

Reliability Index Summary
Cumulative Per Cent of Scores Above the Seventy-three Per Cent Standard
for Each Judge for Each Division and Behavioral Mode

scores with the least fluctuation among all divisions (62 to 73 per cent). Cumulative scores for Judge B showed the most fluctuation among all divisions with a range from 35 and 83 per cent. Judges A and C had the highest cumulative scores for The Cognitive Domain. Judge A scored the highest cumulatively of all other judges in The Kinetic-kinesthetic Domain. Tentatively, it may be concluded that Judge D performed with the most consistency in all four divisions compared with Judges A, B, and C.

Scores for the verbal and nonverbal behavioral modes were studied to determine if a general pattern existed for all four judges, or for individual judges. Based on the cumulative per cent agreement scores, it can be summarized that all judges performed with more reliability in the nonverbal than in the verbal mode. Further, a pattern for each judge in relation to every other judge was found. Judge D had the highest cumulative agreement scores of all four judges in both the verbal and nonverbal mode. Scores for Judge C were next highest in each mode, with Judge A's cumulative scores attaining nearly the same cumulative per cent in both modes. Judge B had cumulative agreement scores that were the lowest of the four judges for both behavioral modes.

In summary, all judges showed more consistency in the Cognitive Domain, and in the nonverbal behavioral mode. Judge D performed with the greatest reliability in all four divisions and in the verbal and nonverbal mode.

Figure 8, page 192, was derived from Tables 26, 27, 28, and 29 in Appendix A and permits a more detailed look at the

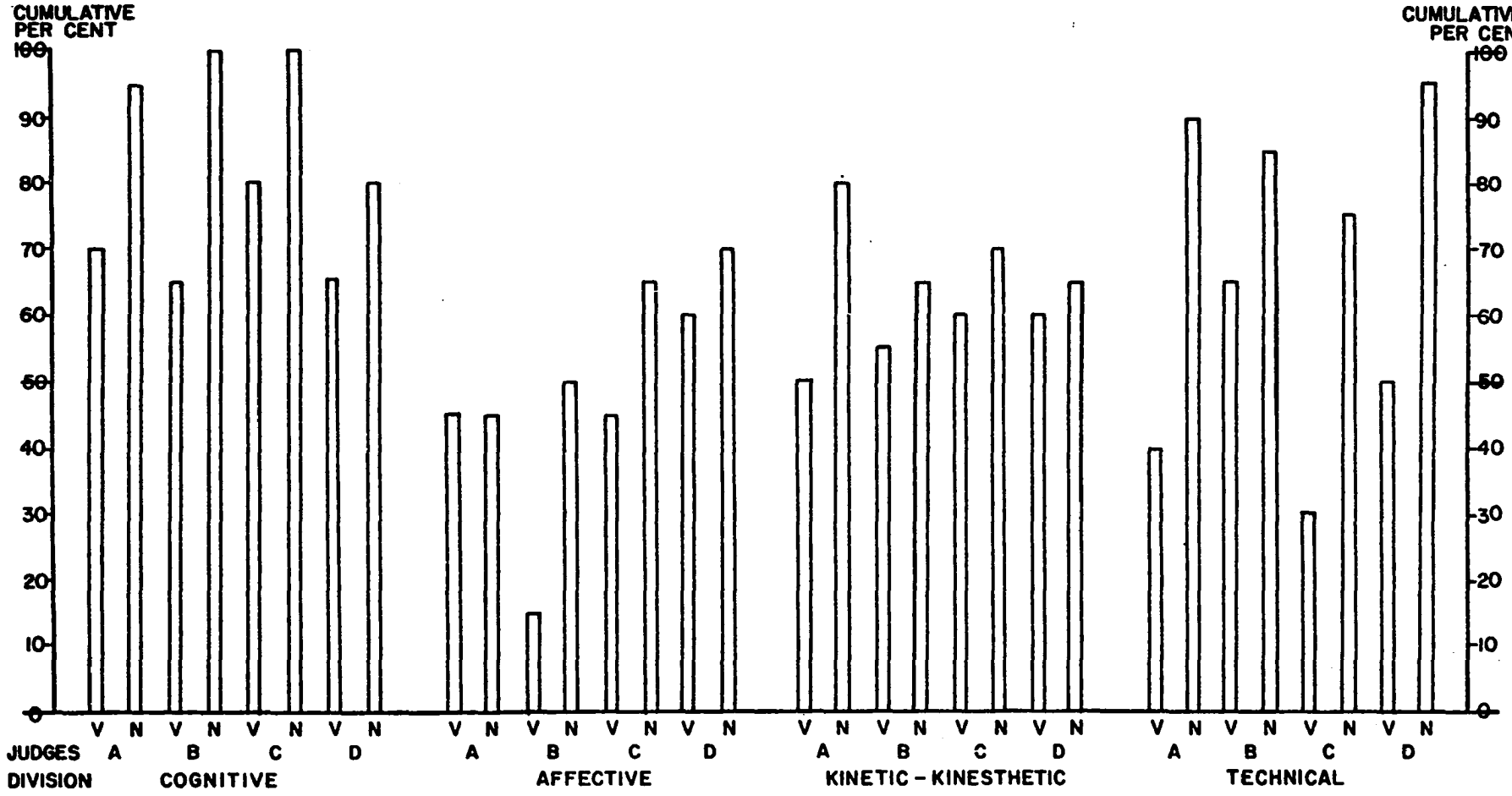

Figure 8

Summary: Reliability Index
Cumulative Per Cent of Total Scores for Each Judge
for Verbal and Nonverbal Behavior in Each Division

verbal and nonverbal modes. This figure shows the cumulative per cent of the total scores of each judge for verbal and nonverbal behavior according to each major division of the category system. The cumulative per cent scores were obtained by first tallying the scores for each judge in the respective mode and division, and then determining the percentages. The per cent of agreement scores that were above the acceptable standard for this study for the Reliability Index were used in Figure 7, page 192.

A general pattern exists for all judges in The Cognitive and Technical divisions; the cumulative agreement obtained was consistently higher for nonverbal than for verbal behavior. This was also true for The Affective and Kinetic-kinesthetic Domains, but the overall reliability was lower and the distinction not as sharp between the two modes. Judge B was the one exception in The Affective Domain having a sharp difference between verbal (15 per cent) and nonverbal (50 per cent).

The use of categories for coding verbal behavior was most consistent in The Cognitive Domain for all judges. The cumulative agreement scores for verbal behavior for all judges in The Kinetic-kinesthetic Domain were not high, but all judges scored 50 to 60 per cent of their responses above the standard set for this study indicating a tendency toward reliability in that Domain.

Studied individually, Judge D performed with the most overall consistency in all Domains except The Technical division. Judge C had the next highest cumulative scores in all Domains, and scored the same as Judge D in The Technical division.

Summary of Overall Reliability

Reliability (.78) was determined for intraclass agreement using analysis of variance (R) and this standard was met for the following portions of the category system: The Cognitive Domain for overall verbal behavior; The Affective Domain for overall nonverbal behavior; The Kinetic-kinesthetic Domain for student nonverbal behavior, and in The Technical dimension for teacher verbal behavior.

Reliability (73 per cent) for intrajudge agreement was computed using the Reliability Index, yielding a percentage of agreement (%) score. All judges showed more consistency in The Cognitive Domain, a tendency toward reliability in the Kinetic-kinesthetic Domain, and consistency in the use of the nonverbal behavioral mode. Tentatively, it may be concluded that Judge D performed with the most overall consistency in all four divisions of the category system, as well as in both the verbal and nonverbal behavioral modes.

The agreement between judges, or objectivity, will be examined in the next portion of this chapter. The presence of a particular judge in the pairs meeting the objectivity standard will be noted.

OBJECTIVITY

Interjudge agreement, or the degree of uniformity with which different judges score the same videotaped choreography lessons, was tested to determine the objectivity of the category

system (Barrow and McGee, 1972:38). Variability in agreement in scoring affects the total reliability of an instrument. Safrit (1973:132) identified two sources of scorer variability: intrascorer and interscorer. Intrascorer variability has been discussed in the preceding section of this chapter dealing with reliability. Interscorer variability, or objectivity, is presented to complete the analysis of scorer variability.

To test the variability among the scores of the judges coding the same videotaped choreography lessons independently, each judge was paired with every other judge to ascertain interjudge agreement. The percentage of agreement scores between the paired judges were obtained by use of the Reliability Index. The formula requires that the number of agreements be divided by the number of agreements plus the number of disagreements (Bijou, 1969:196).

The standard selected as acceptable for interjudge agreement, or objectivity, was 73 per cent. This choice was influenced by the percentage of agreement standard selected by Barrett (1969), discussed more fully in the preceding section for which the Reliability Index was used to determine reliability.

Two types of agreement shown in the tables for objectivity that follow will be reviewed. Agreement of the judges that there were no behaviors observed to be recorded was shown as **. This was interpreted as perfect agreement because there was no coding by either judge. This type of perfect agreement was entered as 100 per cent for computations testing objectivity. A zero (0)

agreement was entered as zero (0) and was caused by total disagreement between the two judges. In other words, one judge coded nothing and the other judge coded specific categories.

The data have been organized to reveal both a percentage of agreement score between each pairing of judges combining codings for all tapes, and a percentage of agreement score between pairings of judges for each individual tape. Data for each pair of judges have been summarized according to cumulative per cent of agreement in the acceptable range (73 to 100 per cent) and in the range indicating positive direction (60 to 72 per cent).

Percentage of Agreement for Paired Judges Using All 10 Tapes

Agreement trends for pairs of judges were apparent for specific domains in particular behavioral modes when scores of all tapes were combined. These trends will be discussed first with reference to Table 18, page 197. The most notable observation of the agreement between judges was that no single pair achieved agreement at or above the 73 per cent standard for all major divisions of the category system. Judges C and D, paired, reached agreement of 73 per cent or higher for 11 of the 16 classifications identified in Table 18, page 197. The lowest number of classifications meeting the selected standard for agreement were made by paired judges AB and BD with seven of 16 scores at or above 73 per cent. Judges B and C, paired, reached the acceptable agreement standard for eight of the 16 classifications. Judge B was in each of the three pairings of judges attaining the standard least often.

Table 18

Objectivity Between Judges in Each Subdivision of the Domains Using All Tapes

Subdivision	Division	AB	AC	AD	BC	BD	CD
TV	Cognitive	86	86	86	84	80	81
SV		92	85	70	85	70	66
TNV		**	**	**	**	**	**
SNV		00	00	00	**	**	**
TV	Affective	38	65	88	38	35	75
SV		60	24	13	17	19	67
TNV		74	72	74	97	89	87
SNV		89	82	79	88	84	93
TV	Kinetic-kinesthetic	40	78	66	33	63	60
SV		18	68	18	22	85	26
TNV		67	51	56	78	65	73
SNV		84	91	81	89	81	84
TV	Technical	80	78	85	69	70	92
SV		58	88	88	49	49	100
TNV		00	00	00	57	00	00
SNV		00	86	96	00	00	00

TV = teacher verbal
SV = student verbal
TNV = teacher nonverbal
SNV = student nonverbal
** = no recording made by either judge, considered 100 per cent agreement.
00 = zero agreement between judges; one judge coded nothing while other judge made codings.

Cognitive. The 73 per cent or above agreement between the pairs of judges was attained most often in The Cognitive division. This was especially true in the teacher verbal behavioral mode where all scores were about 80 per cent. Perfect agreement was reached by all pairs for teacher nonverbal behavior in the Cognitive Domain. Pairings that did not have scores meeting the standard for student verbal behavior were AD, BD, and CD. Judge D is noted as constant in this result. Zero agreement was reached for student nonverbal behavior for all pairings in which A was a part. The zero agreement was caused when Judge A coded student nonverbal behavior and no other judge coded any behavior. The perfect agreements were achieved by Judges BC, BD, and CD by coding nothing. Judge A was the only judge to identify student nonverbal behavior by category. Judges BC had agreements above the standard for all verbal and nonverbal subdivisions in The Cognitive Division.

Affective. No single pair of judges had a percentage of agreement score at or above the 73 per cent standard for all subdivisions in The Affective Domain, as noted in Table 18, page 197. Judges AD and CD had acceptable agreement for all subdivisions except student verbal behavior. All judges were more uniform coding the nonverbal behavioral mode. Judges A and C were the only pairing below 73 per cent agreement for teacher nonverbal behavior. Their score was 72 per cent and was considered to show positive indication that acceptable agreement could be reached.

No pair of judges scored 73 per cent or above for student verbal behavior. Agreement for this behavioral mode was very low for Judges AC, AD, BC, and BD.

The overall poor agreement among the pairs of judges for the verbal behavioral modes, and the more acceptable agreement shown for the nonverbal behavioral modes, may be indicative of two things about The Affective Domain. First, the category definitions may be clearer in their application to nonverbal behavior, while those limited to verbal behavior may be less clear. Second, training of the judges in The Affective Domain may have emphasized identification of nonverbal behavior disproportionately to verbal behavior.

Kinetic-kinesthetic. No pairings of judges had agreement meeting the 73 per cent standard for all four behavior classifications of The Kinetic-kinesthetic Domain. No pairings achieved the necessary agreement for both teacher and student verbal behavior. However, Judges AC met the set standard for teacher verbal behavior and Judges BD reached acceptable agreement for student verbal behavior.

Agreement meeting the standard was reached by Judges BC and CD for the nonverbal modes. All pairings had agreement above 80 per cent for student nonverbal behavior.

Although no pair of judges scored consistently above the acceptable standard in The Kinetic-kinesthetic Domain, Judges BD reflected agreement at 63 per cent and above for both verbal and nonverbal behavior. Both subdivisions related to teacher behavior

had agreement between 63 and 65 per cent, and those subdivisions for which student behavior was identified had agreement well above the acceptable standard at 85 and 81 per cent. These scores were considered a positive indication that agreement meeting the necessary standard could be reached with more training. Tentatively, it may be stated that the same indication may be applied to Judges AC in this Domain.

The total number of agreements that were at or above the acceptable standard, 73 per cent, reflected greater agreement among paired judges coding nonverbal behavior. A range of agreement scores between 18 and 85 per cent for verbal behavior indicated either the necessity for further training or for clearer definitions.

Technical. Three pairs of judges, AC, AD, and CD, reflected acceptable agreement in the use of The Technical division except for teacher nonverbal behavior where zero agreement was made by each of these pairs. Overall, zero agreement was obtained for nonverbal behavior in nine of the 12 agreements possible.

The subdivisions devoted to verbal behavior reflected greater uniformity in scoring by the paired judges. Seven of 12 agreements possible were at 78 per cent and above. Each of the agreements that was below the standard had a single judge factor. Judge B was constant in each low agreement.

Summary of Table 18. All pairings of judges showed consistency in agreement for Cognitive teacher verbal and

nonverbal behavior, Affective student nonverbal behavior, and Kinetic-kinesthetic student nonverbal behavior. The emphasis on the action of the teacher in The Cognitive Domain may reflect the central position of a teacher in cognitive activity. In contrast, the student appears to be central in nonverbal activity represented by movement-motion in The Kinetic-kinesthetic Domain, and nonverbal responses in The Affective Domain.

Judges CD reached agreement at or above the selected standard more frequently than all other pairings of judges. Each pairing with Judge B resulted in attaining the 73 per cent standard fewer times than any other pairing. The scores of Judge B, when paired with those of every other judge, seem to be responsible for obtaining the interjudge agreement scores lower than desired. This tentative conclusion is supported by reviewing the reliability results for Judge B discussed on pages 176 to 179. Judge B had scores at or above the 73 per cent standard fewer times for both verbal and nonverbal behavior than any of the other judges.

Percentage of Agreement for Paired Judges Using Individual Tapes

Percentage of agreement scores for paired judges on individual tapes have been organized in Table 19, page 202, to show the proportion of agreements that met the 73 per cent standard. Agreement scores for each tape have been recorded according to the four major divisions of the category system. The base for determining the proportion of agreements above 73

Table 19

Agreements Above 73 Per Cent Standard Made by Each Pair of Judges for Individual Tapes by Major Division

Tapes	Judges AB C	AB A	AB K	AB T	AC C	AC A	AC K	AC T	AD C	AD A	AD K	AD T	BC C	BC A	BC K	BC T	BD C	BD A	BD K	BD T	CD C	CD A	CD K	CD T	No. Meeting Standard	N	Per Cent Meeting Standard
I	3	0	2	2	3	2	2	1	2	1	2	1	2	1	2	1	1	1	1	2	2	2	1	1	38	96	40
II	4	0	1	2	4	3	1	2	4	3	1	2	4	1	4	3	3	1	3	3	3	3	3	4	62	96	65
III	3	0	0	4	3	2	2	2	3	2	1	2	2	0	1	3	2	1	2	2	3	2	2	2	46	96	48
IV	3	3	3	3	2	2	2	2	2	2	3	2	2	2	2	3	3	4	3	2	4	3	1	4	62	96	65
V	3	1	3	3	4	0	3	2	3	0	3	3	3	0	3	2	3	1	3	3	4	2	3	2	57	96	59
VI	2	1	2	2	2	0	4	1	2	2	2	2	4	0	3	2	3	1	2	2	3	1	3	2	50	96	52
VII	3	2	2	2	4	0	1	3	3	1	2	3	3	0	1	2	4	1	1	3	3	0	2	2	48	96	50
VIII	2	3	2	3	3	2	1	2	2	3	2	2	3	3	1	2	4	3	2	1	3	3	1	1	52	96	54
IX	4	1	3	3	3	1	3	4	4	1	3	4	3	3	3	3	4	2	3	4	3	1	1	3	67	96	70
X	3	1	3	0	3	2	3	1	3	3	2	2	4	1	2	1	3	2	2	3	3	3	3	2	55	96	57

Total	AB C	AB A	AB K	AB T	AC C	AC A	AC K	AC T	AD C	AD A	AD K	AD T	BC C	BC A	BC K	BC T	BD C	BD A	BD K	BD T	CD C	CD A	CD K	CD T
No. meeting standard	30	12	21	24	31	14	22	20	28	18	21	23	30	11	22	22	30	17	22	25	31	20	20	23
N	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Per cent meeting standard	75	30	53	60	78	35	55	50	70	45	53	58	75	28	55	55	75	43	55	63	78	50	50	58

C = Cognitive Domain; A = Affective Domain; K = Kinetic-kinesthetic Domain; T = Technical Dimension

N = Total scores possible if every agreement met the 73 per cent standard.

per cent for each major division in each tape was related to the four subdivisions (teacher verbal, student verbal, teacher nonverbal, student nonverbal). Agreement scores at or above 73 per cent for each subdivision in a major division were tallied. Each tally represented one agreement at or above the selected standard. A score of 4 in Table 19, page 202, means that the pair of judges being studied had agreement scores of 73 per cent or higher in teacher verbal, student verbal, teacher nonverbal, and student nonverbal behavior.

Two things become apparent when the tapes are examined in this way: general difficulty in agreeing when coding specific divisions of particular tapes, and the possible effect of a single judge on repeated low agreements among paired judges. Patterns of agreement may be noted for particular pairs of judges.

Each pairing of judges will be reviewed in relation to Table 19, page 202. The order of review will be: AB, AC, AD, BC, BD, and CD.

Judges AB. Judges AB had stable agreements that were considered indicative of positive comprehension and application of the category system for The Cognitive division. Minimal agreement (zero and one tally) on Tapes I, II, III, V, IX, and X for The Affective Domain should be noted. Agreement for The Kinetic-kinesthetic Domain was weak only for Tapes II and III. These two judges agreed on application of The Technical division for all but Tape X. Viewed overall, the pair AB showed uniformity in coding three divisions.

Judges AC. Judges AC had the most fluctuation in the scores for The Affective division with a range from zero to three agreements throughout the 10 tapes. No agreement was shown for Tapes V, VI, and VII in The Affective division, which means that one judge coded in that division and the other judge did not code. Tapes II, VI, and VII reflected the least uniformity in scoring for The Kinetic-kinesthetic Domain. The occurrence of two agreements above the 73 per cent standard for The Technical division indicates that these two judges agreed that they were confused and could not identify the behavior more specifically. Such scores could also mean that there were abnormalities in the playback of the tape making the audio or video portions unclear for quick analysis. Judges AC had scores that indicated the need for more practice especially in The Affective and Kinetic-kinesthetic Domains.

Judges AD. Judges AD reflected similar application of the use of the category system for only The Cognitive division. There was only one instance when there was total disagreement (Tape V in the Affective division). The distribution of agreement on only two of four aspects of behavior in The Cognitive, Affective, Kinetic-kinesthetic, and Technical divisions was slightly higher than agreements on more than 50 per cent of the behaviors. These two judges paired, showed promise for achieving acceptable objectivity with more training for all parts of the system. No single tape appeared to have had material creating more confusion in coding than any other tape.

Judges BC. This combination of judges was notably low in agreement for The Affective division. Agreement for The Kinetic-kinesthetic division was quite favorable with the exception of Tapes III, VII, and VIII. Other pairings of judges did not have exceptionally high agreement for these three tapes either. Judges BC agreed for at least two of the four codings in The Technical division for all but Tapes I and X, which were lower. This indicates a common understanding and application of the categories for The Technical division. This particular pairing of judges reflected the need for more training in all categories of all divisions, perhaps more specifically in The Affective division where four zero agreements were made.

Judges BD. Judges BD had no zero agreements. They showed consistent patterns of strength in The Cognitive division. Greatest agreement was made in Tapes IV and IX for all divisions. There was most uniformity in scoring for The Cognitive and Technical divisions among all 10 tapes. The Affective division showed the least consistency in agreement with eight tapes having less than three scores that met the 73 per cent standard. B and C exhibited strength in two divisions, Cognitive and Kinetic-kinesthetic, and weakness in The Affective. Although the strength in Cognitive was a pattern in all pairs, it was unusual for a pair to have strength in The Kinetic-kinesthetic division. This may be a reflection of the background of these two judges prior to training in the use of the category system.

Judges CD. Judges C and D showed consistency in the use of all divisions for four of 10 tapes. Scores for all these tapes showed acceptable agreement for two or more subdivisions in The Cognitive, Affective, Kinetic-kinesthetic, and Technical divisions. This tends to indicate common, but limited, comprehension in the application of the categories in coding behavior. Tape I was one of the tapes that did not meet the standard for consistency. This may have been a case of poor mechanical-technical production since no pair of judges scored above two agreements for more than one major division on Tape I. The one division for which there was zero agreement for Judges CD in Tape VII, Affective, was the same division for which all other pairs of judges showed discrepancy. The low scores in Kinetic-kinesthetic on Tape IX was unique to Judges CD. Although the pair CD was not exceptionally strong, scores indicated that this pairing had the greatest overall agreement.

Summary of Table 19. Scores for each pair of judges showed least consistency in The Affective division. Scores for each pair of judges were most consistent in The Cognitive Domain. All pairs of judges showed consistency in the use of The Kinetic-kinesthetic division. Most agreement among judges was apparent for Tapes II, IV, and IX. These three tapes were filmed in class situations that were unique: no more than three students were present.

Judges AB showed uniformity in three divisions, with stable agreements indicative of positive comprehension for The Cognitive Domain. Judges AC reflected the need for more practice, especially

in The Affective and Kinetic-kinesthetic Domains. Judges AD showed promise of achieving acceptable objectivity with more training. Judges BC were especially low in coding Affective behavior, but appeared to need more training in all aspects of the system. Judges BD showed strength in The Cognitive and Kinetic-kinesthetic Domains. Their strength in the latter was unique among pairings of judges. Although the overall per cent of scores (55) for Judges BD for The Kinetic-kinesthetic Domain was the same as for other pairings, the distribution of these agreement scores among tapes was slightly higher than for other pairings. Judges BD showed least consistency in The Affective and Technical divisions. Judges CD had the greatest overall agreement in all four divisions.

Overall objectivity has been summarized in Table 20, page 208, based on Tables 30 and 31 in Appendices B and C. The total per cent of scores between 60 and 100 per cent, including perfect agreements (**), made by each pair of judges has been subdivided in two ways: (1) the acceptable range (73 to 100 per cent), and (2) the range indicative of positive direction (60 to 72 per cent).

Referring to Table 20, page 208, Judges CD clearly achieved the greatest uniformity with 71 per cent of total scores in the 60 to 100 per cent range. Judges BC had the least uniformity, having only 63 per cent of their 160 scores in the range from 60 to 100 per cent. Although two other pairs of judges had 68 and 67 per cent of their total scores at or above the selected standard, this overall result was because of the inclusion of scores within the 60 to 72 per cent range in computing the grand total.

Table 20

Objectivity
Per Cent of Total Scores for Paired Judge
Agreement Within the 60 to 100 Per Cent Range

	Paired Judges					
	AB	AC	AD	BC	BD	CD
Per cent of scores in acceptable range (73-100)	54	54	56	53	59	59
Per cent of scores in positive indication range (60-72)	14	11	8	10	8	12
Grand Total	68%	65%	64%	63%	67%	71%

Summary: Objectivity

No single pairing of judges was outstanding in agreement coding the taped lessons. All pairs of judges showed similar ability to agree in coding, summarized in Table 20, page 208.

Specific strengths in coding were apparent for all judges in The Cognitive Domain and for the nonverbal behavior of both The Affective and Kinetic-kinesthetic Domains. All pairings, except Judges AD, had difficulty coding student verbal behavior in The Technical division.

Although overall objectivity scores were not high, the consistency of scores is important. All total scores reported in Table 20, page 208, were between 63 and 71 per cent. This result showed promise for gaining more uniformity of scoring. Four factors contributed to agreements attained: (1) the complexity of the category system itself with multiple divisions, behavioral modes, and between division interaction, (2) limited practice or training time, (3) limited training materials, and (4) the possibility of unclear definitions for each category, necessitating too much interpretation in identification of a behavior.

Validity of the category system will be presented in the final portion of this chapter. Construct validity will be presented and interpreted first, followed by content validity.

VALIDITY

The validity of the category system was tested by examining both construct and content validity. The representativeness and comprehensiveness of the system was examined numerically

for construct validity, and verbally through the opinions of experts for content validity.

Construct Validity

The major divisions, the categories within each division, and the interrelationship among the parts of the category system have been presented in Chapter III. The examination of the extent to which all categories were used was guided by two questions: can all teacher-student verbal and nonverbal interaction in choreography class be coded by use of the category system; and, can all categories, defined for the system, be used in coding choreography lessons? Construct validity reflects the amount of use of the categories in the system (Barrett, 1969:183).

The system will be examined by major division and subdivision first. The overall amount of coding for each of these portions will be studied as an indication of the overall construct validity of the system.

Coding for major divisions and behavioral modes. The summary of coding for the major divisions and for the four verbal and nonverbal subdivisions is shown in Table 21, page 211. Significant proportionate use of verbal and nonverbal designation by division is apparent. Teacher verbal and student verbal identification was the highest in The Cognitive Domain. Fifty-five per cent of all teacher and student verbal behavior coded occurred in The Cognitive Domain. This supports the primary design of The Cognitive Domain.

Table 21

Construct Validity
Summary: Coding for Major Divisions and Behavioral Mode

Division	Behavioral Mode									
	TV		SV		TNV		SNV		Total	
	N	%	N	%	N	%	N	%	N	%
Cognitive	853	55	810	55	0	0	0	0	1663	27
Affective	143	9	77	5	768	91	976	42	1964	32
Kinetic-kinesthetic	205	14	167	11	67	8	1293	56	1732	28
Technical	330	22	420	29	7	1	41	2	798	13
Total										100
N	1531		1474		842		2310		6157	
%		25		24		14		37		

TV = teacher verbal; SV = student verbal; TNV = teacher nonverbal; SNV = student nonverbal
N = number of codings
% = per cent

Identification of teacher nonverbal behavior was extremely high in The Affective Domain (91 per cent). Student nonverbal behavior was coded primarily in The Affective (42 per cent) and Kinetic-kinesthetic Domains (56 per cent). The concentration of coding of nonverbal behaviors in these two Domains parallels the designated emphasis of the respective Domains. The dominance of student nonverbal identification in The Affective and Kinetic-kinesthetic Domains may indicate focus toward student involvement in the choreography lessons taped and coded for this study.

Overall use of the verbal and nonverbal modes was nearly equal. Studied by teacher and student subdivisions, student nonverbal behavior (37 per cent) was identified most often throughout the lessons coded. Teacher nonverbal behavior was designated least often (14 per cent). Teacher and student verbal behavior was coded 25 and 24 per cent of the total codings indicating nearly equal verbal responses in the coded lessons. Based on the limited number of lessons coded, the distribution of coding among the four subdivisions provides support for their inclusion in the category system. The identification of teacher nonverbal behavior is representative only of the tapes coded. No further conclusions can be drawn about the low per cent in this subdivision based on such a small sample of behavior.

The total coding in each major division revealed near equal use of The Cognitive and Kinetic-kinesthetic Domains, and maximum activity in The Affective Domain. The Technical dimension was used for only 13 per cent of the total codings. This overall

use of the divisions is considered positive in relation to the design of the category system. Particularly important is the comparatively lower per cent of coding in The Technical dimension. That dimension was planned for use when no category in the system seemed representative of the behavior observed, or when mechanical technical difficulties made specific category identification impossible. The low per cent of use of The Technical division indicates that 87 per cent of all behaviors observed were codable by category.

Distribution of coding throughout The Cognitive, Affective, Kinetic-kinesthetic, and Technical divisions support their inclusion in coding behavior in a choreography class. Similarly, the identification of teacher-student verbal and nonverbal behaviors had proportionate distribution indicating the need for their inclusion in the category system.

Coding of categories within Domains. Individual categories were coded with varying frequency. The number of codings for each category within the division has been summarized in table form. The frequency and percentage of coding within each category is shown for individual judges in the major divisions, as well as for the four judges combined. The use of an individual category for 10 per cent of the codings in that division was considered necessary for acceptable construct validity. This standard is based on the large total number of categories (34) in the system, and the probable number of occurrences of each behavior in the limited number of taped choreography lessons.

The distribution of coding individual categories among the four judges was examined to assure the common use of a category rather than its exclusive use by a single judge.

Discussion will focus on those categories that were used most often and least often in each division. The performance of individual judges will be cited as it supports the use of seldomly identified categories. The order of examination will be Cognitive, Affective, Kinetic-kinesthetic, and Technical divisions. At the outset, it should be noted that the total codings for all categories in a single division are not the same as the totals shown in Table 21, page 211. The discrepancy is caused by the way in which the judges were trained to identify as many parts of the observed behavior as possible. Under these circumstances a judge could identify who was behaving (teacher or student), whether it was a verbal or nonverbal behavior, and probably in what division of the system the behavior was occurring. The identification of this much of the observed behavior was considered vital to gaining insight into overall flow of interaction between teacher and student in choreography class. Reasons for the inability to identify behavior by specific category have been discussed previously in relation to The Technical division.

Cognitive. Table 22, page 215, shows that the categories used most frequently were Comprehension, Analysis, and Evaluation based on Pre-set standards. The categories used least frequently were in the higher levels of the hierarchical

Table 22

Construct Validity
Summary: Frequency of Use of Categories in the Cognitive Domain by Each Judge

Cognitive categories	Judge A N	A %	B N	B %	C N	C %	D N	D %	Total N	Total %
1. Knowledge	10	22	17	35	18	37	3	6	48	5
2. Comprehension	78	55	19	13	32	22	14	10	143	16
3. Analysis	113	22	67	13	244	47	90	18	514	58
4. Application	0	0	0	0	0	0	0	0	0	0
5. Synthesis	1	33	0	0	2	67	0	0	3	1
6a. Eval. preset forms	49	37	48	36	4	3	32	24	133	15
6b. Quantitative	0	0	0	0	0	0	7	100	7	1
6c. Qualitative	20	63	0	0	0	0	12	37	32	4
Total	271		151		300		158		880	100
Per cent		31		17		34		18		

N = number of codings of each category
% = per cent of total codings by category and by judge

arrangement of this division: Synthesis, Quantitative Evaluation, and Qualitative Evaluation. The low frequencies may indicate that these particular high level behaviors may be observed seldom in a choreography class and that the categories may not be representative, or that the data are insufficient to draw conclusions at this time. Two judges did not code Synthesis and Qualitative Evaluation, and a single judge identified Quantitative Evaluation.

Application, category 4, was coded by no judge. Before drawing conclusions about the inactivity of this category, it is important to review its definition and the instructions for use. Application has been defined as selection of the appropriate way to solve a problem choreographically. If the solution, or application of method, was exhibited as a movement response the behavior was not coded as Cognitive. It was placed in The Kinetic-kinesthetic Domain and identified according to the appropriate category in that Domain. However, verbal responses were coded as Cognitive behavior. Consistent non-use of this particular category is not surprising when the assumption is made that there may be a large proportion of application behaviors in the movement mode rather than the verbal mode in a choreography class.

All categories, except those specifically for evaluation, were derived from Bloom's (1956) Taxonomy of Educational Objectives, The Classification of Educational Goals. Handbook I: Cognitive Domain. The taxonomy has been supported in the literature and has been used as a base for other studies in teacher behavior (Taba and Elzey, 1964; Webb, 1970). In the present

study, the variations in frequency have been viewed positively with regard to coding Cognitive behavior. Quantitative Evaluation and Application, especially, need to be tested with the other categories in more videotaped lessons with a larger sample of teachers.

Affective. The Affective Domain, shown in Table 23, page 218, had active categories in Respond-attentive, Respond-inattentive, and Respond-congruent and met the standard for validity. However, Respond-inattentive was coded disproportionately by one judge and may not be a true reflection of the application of that category. Very high frequency in these three categories tended to distort the results mathematically of the rather stable use of the remaining categories.

The only category that was coded lower than 15 times was Respond-incongruent, and this was identified only twice by a single judge. This category and that for Respond-inattentive were the only two categories coded so disproportionately. All other categories were activated by the judges with similar distribution. The consistency of the use of the category is revealed in the totals for each judge for the division, with 30 per cent overall the highest and 23 per cent the lowest attained.

All categories need further study and refinement. The results of their use by individual judges supports their inclusion in further use of the system with a larger sample of videotaped lessons.

Table 23

Construct Validity
Summary: Frequency of Use of Categories in the Affective Domain by Each Judge

Affective categories	Judge A N	A %	B N	B %	C N	C %	D N	D %	Total N	Total %
1a. Receptive	38	66	14	24	0	0	7	10	59	3
1b. Puzzlement/ query	9	45	6	30	3	15	2	10	20	1
2a. Respond	127	14	218	23	246	27	334	34	925	42
2b. Inatten- tive	2	1	0	0	242	99	1	0	245	11
2c. Congruent	318	38	234	28	165	19	128	15	845	39
2d. Incon- gruent	0	0	0	0	2	100	0	0	2	-
2e. Satis- faction	19	39	9	18	3	6	18	37	49	2
2f. Dissatis- faction	8	33	10	44	3	12	3	11	24	1
3a. Evalu- ation-O	24	86	0	0	3	11	1	3	28	1
3b. Evalu- ation-K	0	0	12	80	1	7	2	13	15	1
Total	545		503		668		496		2212	100
Per cent		25		22		30		23		

N = number of codings of each category
% = per cent of total codings by category and by judge
O = opinion
K = kinesthetic

Kinetic-kinesthetic. Table 24, page 220, shows that all categories were activated in coding the observed behavior. However, Spontaneous Group and Independent Improvisation (6a, 6b) and Re-working Major Sections (7b) were designated by extremely low frequency. In comparison, three categories were observed and coded very frequently: Imitation, Marking, and Full-out Performance. Two categories with very low frequency were coded by a single judge, while the third category was identified by two judges. Although the low frequency coupled with a minimum number of judges coding seems to indicate the need to delete these three categories, their inclusion in the system was supported strongly in the literature. More refinement in the definition of each may help clarify their application. A larger sample of teachers and videotaped lessons is needed to further test the validity of these categories.

The categories not identified thus far were used by the judges similarly throughout. Compose (7a) and Experimentation (4) are the exceptions with only two judges coding 7a and three judges coding category 4. This distribution of judge activity gives credence to continued inclusion of these categories in further testing of the validity of the category system.

Technical. The summary of category use in Table 25, page 221, reveals exclusive activity in two of the three categories. Further, Judges C and D have the lowest overall frequency coding in this dimension which provided additional support for their strong agreement when paired for objectivity

Table 24

Construct Validity
Summary: Frequency of Use of Categories in the Kinetic-kinesthetic Domain by Each Judge

Kinetic-kinesthetic categories	Judge A N	A %	B N	B %	C N	C %	D N	D %	Total N	Total %
1. Replication	97	81	4	3	10	8	9	8	120	7
2. Imitation	163	37	50	11	185	42	39	9	437	26
3. Manipulation	32	18	22	12	67	38	55	31	176	10
4. Experimentation	12	57	2	10	0	0	8	33	22	1
5a. Structured Impr. G.	19	17	33	20	26	16	85	52	163	10
5b. Structured Impr. I.	11	19	12	20	9	18	23	43	55	3
6a. Spontaneous Impr. G.	1	50	0	0	1	50	0	0	2	-
6b. Spontaneous Impr. I.	5	100	0	0	0	0	0	0	5	-
7a. Compose	0	0	2	4	0	0	44	96	46	3
7b. Rework major portion	0	0	7	100	0	0	0	0	7	-
7c. Rework single facet	37	40	10	11	34	37	12	12	93	5
8a. Performance-marking	35	17	119	57	49	24	5	2	208	12
8b. Performance-full out	116	31	85	23	77	21	96	25	374	23
Total	528		346		458		376		1708	100
Per cent		32		20		26		22		

N = Number of codings of each category
% = per cent of total codings by category and by judge
Impr. G. = Improvisation Group
Impr. I. = Improvisation Independent

Table 25

Construct Validity
Summary: Frequency of Use of Categories in the Technical Dimension by Each Judge

Technical dimension categories	Judge A N	A %	B N	B %	C N	C %	D N	D %	Total N	Total %
X. Uncodable	205	26	314	39	139	17	140	18	798	93
/ Silence/ confusion	0	0	0	0	0	0	0	0	0	0
+ Organiza- tion	13	23	10	17	15	26	20	34	58	7
Total	218		324		154		160		856	100
Per cent		25		38		18		19		

N = number of codings of each category
% = per cent of total codings by category and by judge

study. Judge B used The Technical dimension the most. This may indicate confusion in identifying behavior by specific category, necessitating the use of the uncodable (X) category in The Technical dimension.

Although no judge used the category for silence or confusion (/), the inclusion of a category of this nature is supported in the literature. Disuse of this category was not considered significant in relation to overall validity.

Overall high frequency of use of the uncodable category indicates the need for its inclusion in the system. The double coding function assigned to this category makes it difficult to determine the distribution of mechanical-technical flaws compared with behavior for which no existing category was appropriate. This category should be divided into two separate categories in future testing of the system.

The category for classroom organization (+) was used with similar proportions by all four judges. Although the overall use (7 per cent) of this category and the equal distribution among judges was below the suggested validity standard, it is considered a contributing category to the overall validity of the system.

Summary: construct validity. The limited sample of teachers and classes needs to be acknowledged in relation to the summary statements that follow. Overall, all but two of 34 categories were used by the judges for coding observed behavior. Twelve of the 34 met the validity standard when applied to the

overall percentage of use. Studied judge by judge, Judge A had 28 categories that met the validity standard (10 per cent of use in a given division); Judge B had 23 categories meeting that standard; Judge C had 22; and Judge D had 24 categories meeting the standard. Some categories were used between seven and 10 per cent and were considered to show promise of validity. Proportionately, the overall number of categories used by the separate judges that met the validity standard was greater than those that fell markedly below the standard for this study. Tentatively, it may be concluded that construct validity is tenable.

Content Validity

The extent to which the content of the category system is representative and comprehensive of the class situation or subject matter about which conclusions will be drawn is demonstrated by content validity (American Psychological Association, 1966:12). The primary means for establishing content validity is through qualitative interpretation (Safrit, 1973:96).

Eight dance experts, noted for work in choreography as writers, teachers, or choreographers, were asked to judge the content validity of the category system. Descriptive materials, and the category system itself, were sent to the six experts who agreed to study the system. The consensus of the experts indicated that the category system was representative and comprehensive of class situations and subject matter in teaching choreography.

Specific questions were posed by the experts about the hierarchical ordering at the lowest levels of both The Affective and Kinetic-kinesthetic Domains. It was suggested that categories 1a, Attend, and 2a, Respond, in The Affective Domain were not defined with enough clarity to make them discrete and mutually exclusive hierarchically. In The Kinetic-kinesthetic Domain, both categories 1 and 2, Replication and Imitation, were determined as necessary to the comprehensiveness of the system but questioned as to their hierarchical difference.

Improvisation, categories 5 and 6 in The Kinetic-kinesthetic Domain, was considered a critical component in the choreographic process by the experts. Inclusion of those categories related to improvisation was not questioned. Three central aspects of improvisation were stressed by the experts: (1) the interaction-involvement factor for the dancer that occurs during improvisation, (2) the distinction between group and independent improvisation, and (3) the emphasis on the sensory base of improvisation, as opposed to one that stresses a cognitive base. The experts were in agreement that each aspect of improvisation was represented by categories in the system. The degree to which sensory interaction was defined was considered questionable by some experts, though difficult to describe verbally.

One expert noted the alteration in the original hierarchy for The Cognitive Domain established by Bloom, and others (1956). The suggestion was made that the hierarchical sequence for The Affective Domain was weaker in the current study than that

established by Krathwohl (1964). The value system based on opinion in The Affective Domain was considered undesirable in the arts. However, a different expert viewed cognitive and affective judgment combined as necessary for an individual to structure his values in dance. The opinion and kinesthetic response categories in The Affective Domain, 3a and 3b, were encouraged by that expert.

The cultural implications of gesture and the viability of categories representing both teacher and student initiated behavior were focal points for comment by more than one expert. Discussion has been deferred until Chapter VI as a part of the suggestions for further study.

In summary, all experts concurred that the category system to describe teacher-student verbal and nonverbal interaction in the teaching of choreography was complex. No categories were identified as unnecessary by the experts, nor were additional categories specified for inclusion. Suggestions were made to clarify the discreteness of individual categories.

The responses of the six dance experts were considered significant. They concurred that the category system was representative and comprehensive of the subject matter and class situations in the teaching of choreography. Content validity was considered established through the qualitative interpretations of the six dance experts.

SUMMARY

The reliability, objectivity, and validity of the category system developed for this study have been analyzed in Chapter V.

Reliability was tested as intraclass agreement and intrajudge agreement. Objectivity was studied as interjudge agreement. Both construct and content validity were presented and interpreted.

The combined judges obtained intraclass agreement (reliability) that met the .78 standard in The Cognitive Domain for verbal behavior and in The Affective Domain for nonverbal behavior. The standard was met in The Kinetic-kinesthetic Domain for student nonverbal behavior, and for The Technical dimension for teacher verbal behavior.

Reliability (73 per cent) for intrajudge agreement was obtained by all judges in The Cognitive Domain with a tendency toward reliability in The Kinetic-kinesthetic Domain and overall in the use of the nonverbal mode.

Objectivity, or the agreement between judges coding the same video tape, was tested using the Reliability Index yielding a percentage of agreement score. All judges showed similar ability to agree in coding. The consistency of the range of the overall scores was noted and showed promise for gaining more uniformity of scoring.

Construct validity was considered tenable because the proportion of categories that met the validity standard was greater than those that fell markedly below the standard. Content validity was considered established, based on the opinions of six dance experts.

Chapter VI presents the summary and conclusions, and the implications for further study.

CHAPTER VI

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

The first portion of this chapter will have as its focus a summary of the purpose and background of the study and the procedures used to estimate the reliability, objectivity, and validity of the category system. The conclusions and implications for further study will conclude the chapter.

SUMMARY

The choreographic process is one of constant challenge both for the choreographer and the teacher of choreography. Spoken and unspoken communication guide learning the craft of shaping movement into expressive form. Identification of the components of the choreographic process and both verbal and nonverbal communication have not been stressed with regard to their sensitive coordination during the learning phase of choreography.

Purpose

Descriptive-analytic research in teacher-student movement behavior has been limited and, to date, no category system has had the teaching of choreography as its special focus. The complexity of teacher-student interaction has been acknowledged repeatedly in the literature reviewed. The behaviors assumed to exist in choreography class need to be studied to make more clear the role of the teacher in the interaction.

It was the purpose of this study to develop and examine the feasibility of a procedure to systematically describe teacher-student verbal and nonverbal interaction in the teaching of choreography.

Background of the Study

Assertions as to the integrated thinking, feeling, and acting function of man in both the dance and the descriptive-analytic research literature supported the development of a multi-dimensional category system to describe interaction in choreography class. The broad concepts that underlie choreography and the elements of dance that are common in all choreography were considered basic to the comprehension of the choreographic process.

Three broad concepts underlying choreography were: (1) man, the creator-choreographer functions as an integrated thinking, feeling, and acting being, (2) movement is the substance or material of dance, and (3) dance is literal or nonliteral as an expressive form. In the literature reviewed, all writers concurred that these three concepts underlie choreography, but variation was evident in the emphasis on sensing, acting, and thinking. Time, Space, and Dynamics were reiterated as those common elements present in a choreographic piece. The complexity of the choreographer himself was apparent in discussion of his use of many stimuli as sources for dance, and his subsequent selection, refinement, and evaluation of his work.

The cognitive, affective, and movement behaviors were identified as interwoven functions in choreography. Previously,

each type of behavior had been studied independently, or in limited combination, in examining the teacher or the student in classroom settings. The scope of these studies was broad: nonverbal behavior of teachers, verbal behavior of teachers, types of thinking, levels of complexity and abstraction of thought, and student movement behavior.

Limitations were evident in the study of teacher-student behavior when the verbal and/or nonverbal activity of only one person was isolated and recorded. A more complete description of classroom activity necessitated recording both teacher and student verbal and nonverbal behavior, and the specific focus of each behavior (cognitive, affective, or movement). The development of a category system to systematically describe these behaviors as they occur in the teaching of choreography was considered basic to future investigation of the role of the teacher in choreography class.

The Category System

Two major ideas influenced the development of the multidimensional category system to describe teacher-student verbal and nonverbal interaction in the teaching of choreography: (1) the theoretical considerations of the components of the choreographic process, and (2) the unity of man as it relates to dance. The system had four major divisions: The Cognitive Domain, The Affective Domain, The Kinetic-kinesthetic Domain, and The Technical division. Each Domain had as its focus a particular aspect of verbal and nonverbal interaction in the teaching of choreography.

Bloom's (1956) work served as a base for The Cognitive Domain. The work of Galloway (1962) and Krathwohl (1964) provided insight in identifying categories for The Affective Domain. The process functions in choreography were the source for The Kinetic-kinesthetic Domain. Each major division and its respective categories were operationally defined in the context of the study. The Technical division functioned as an aid in coding observations about class organization and mechanical details.

The technique for observing and recording behavior permitted the coding of simultaneous teacher-student verbal and nonverbal behaviors as they occurred simultaneously in any of the Domains or in The Technical division. The recording technique also provided a means to preserve the sequence of behaviors using timed 15 second intervals and to acknowledge the technical aspects of videotaped materials and the organization of choreography class. Each time behavior was observed, the following judgments were made: (1) identification of who was exhibiting the behavior (teacher, student), (2) identification of the type of behavior (verbal, nonverbal), (3) the major division within which the observed behavior was best categorized (Cognitive, Affective, Kinetic-kinesthetic, Technical), and (4) the specific category that best described the observed behavior. A sample recording sheet is in Appendix D.

Estimation of Reliability, Objectivity, and Validity of the System

In order to examine the feasibility of the category system as a means for describing teacher-student verbal and nonverbal

interaction in teaching choreography the reliability, objectivity, and validity were estimated. The recorded observations of 10 videotaped choreography lessons by four trained observers and the responses from six experts in choreography were used as the data for making these estimations.

Four dance teachers were selected to have three choreography lessons videotaped. Selected portions of each teacher's lesson were continuously videotaped. Single students, having a distinguishing ornamentation or design in the leotard, tights, or hairstyle, were selected at the moment of taping to be observed as the interaction changed.

Classes were videotaped in a manner that did not interfere with the class working space or normal class procedures. In addition the following criteria were met: (1) the artificial or natural light in the room had to be of sufficient intensity to allow for sharp definition of all class participants being taped, and (2) the placement of microphones in different parts of the studio had to provide for a clear recording of verbal interaction throughout the room.

Four graduate students from The University of North Carolina at Greensboro were selected as judges in the use of the category system. All of the judges had undergraduate professional preparation in physical education, and none of the judges had any special training in choreography or dance. Ten training sessions were held each lasting no less than 45 minutes and no more than two and a half hours. The total training time was 15 hours.

Two recording sessions were held one week apart. The coded observations of the judges were used to estimate the reliability, objectivity, and construct validity. Reliability was tested in two ways. First, intraclass correlation coefficients were obtained by analysis of variance procedures using the combined scores of all four judges for all 10 tapes in the first recording session, and the combined scores of all four judges for each individual tape in the first recording session. Intrajudge agreement, or the consistency of a given individual's repeated performance, was tested using the Reliability Index (Bijou, 1969) to estimate percentage of agreement between the coded observations in the first and second recording sessions for each of the 10 tapes. Objectivity, or the extent to which each judge agreed with every other judge in the same recording session, was estimated by the Reliability Index (Bijou, 1969). Scores of the paired judges were examined in two ways: first, on the totals for all 10 tapes combined, and second, on the totals for each individual tape.

The validity was tested by examining both construct and content validity. The representativeness and comprehensiveness of the system were examined numerically for construct validity and verbally through the opinions of six experts, noted for work in choreography, for content validity.

CONCLUSIONS

Overall, it may be concluded that the category system developed shows promise of being a feasible procedure for

systematically describing teacher-student verbal and nonverbal interaction in the teaching of choreography. The concept that teacher-student verbal and nonverbal interaction can occur in The Cognitive, Affective, and Kinetic-kinesthetic Domains was supported by the results of the study.

Those portions of the system for which greater reliability was attained coincided with the intent of the design of the major divisions within the category system. Objectivity scores supported the feasibility of the category system. Among the major divisions of the category system, the distribution of high and low objectivity scores was similar to that noted for reliability: the highest scores were in The Cognitive Domain, the lowest in The Affective Domain, and the smallest range of scores was in The Kinetic-kinesthetic Domain, the greatest range was in The Technical division. Both construct and content validity were considered acceptable, providing additional support for the overall feasibility of the category system.

The following data support these conclusions:

1. Intraclass Agreement: Reliability Coefficients (R) Combined Scores for Four Judges on All 10 Tapes.
    a. The strength of the category system was in The Cognitive Domain for verbal behavior (.89, .94), The Affective Domain for nonverbal behavior (.86, .94) and The Kinetic-kinesthetic Domain for both verbal and nonverbal behavior (.72, .74, .72, .99). Other parts of the category system had coefficients that

deviated markedly from the acceptable standard (.78).

b. Coefficients for verbal behavior in The Technical division (.81, .68) indicated more agreement than for nonverbal behavior (-.08, .00).

2. Intraclass Agreement: Reliability Coefficient (R) Combined Scores for Four Judges for Each Individual Tape.

a. Cognitive Domain: 95 per cent of the verbal and nonverbal behavior was above the .78 standard for agreement among judges.

b. Affective Domain: 15 per cent of the verbal behavior and 95 per cent of the nonverbal behavior coded was above the .78 standard.

c. Kinetic-kinesthetic Domain: 45 per cent of the verbal behavior and 85 per cent of the nonverbal behavior was above the .78 standard. In both the verbal and nonverbal subdivision there was greater agreement in coding student behavior than in coding teacher behavior.

d. Technical division: 90 per cent of the verbal and 60 per cent of the nonverbal behavior coded met the .78 acceptable standard.

3. Intrajudge Agreement: Reliability Index (%) Percentage of Agreement Scores for Individual Judges for 10 Tapes Combined.

a. Between 50 and 58 per cent of the coding for verbal behavior for the four judges exceeded the 73 per cent standard.

b. Between 75 and 79 per cent of all the codings by the four judges for nonverbal behavior exceeded the 73 per cent standard.

c. Judge B had the lowest percentage of acceptable scores in both subdivisions (verbal-50 per cent and nonverbal-75 per cent).

4. Intrajudge Agreement: Reliability Index (%) Percentage of Agreement Scores for Individual Judges for 10 tapes Combined, Domain by Domain.

a. Cognitive: Cumulative agreements above the 73 per cent standard for verbal behavior for all four judges were between 65 and 80 per cent, and between 80 and 100 per cent for nonverbal behavior.

b. Affective: Cumulative agreements above the 73 per cent standard for all four judges were between 15 and 60 per cent for verbal behavior, and from 45 to 70 per cent for nonverbal behavior.

c. Kinetic-kinesthetic: Consistency was noted among the judges because of the 10 point range of cumulative per cent agreement scores for verbal behavior (50 to 60 per cent). The cumulative per cent scores for all judges for nonverbal behavior in this Domain were identical to those for The Cognitive Domain for verbal behavior with a range from 65 to 80 per cent.

d. Technical: Cumulative per cent scores for verbal

behavior were between 30 and 65 per cent, and for nonverbal behavior between 75 and 95 per cent.

e. Judge B showed the greatest overall fluctuation in cumulative agreement scores for every major division.

f. Judge D showed the least overall fluctuation in cumulative agreement scores for major division.

5. Objectivity: Interjudge Agreement (Percentage of agreement) by Subdivision within each Division.

a. Cognitive: Three of the six pairs of judges had agreement scores below the 73 per cent standard for student verbal behavior. All other pairs had agreement scores between 80 and 100 per cent for both verbal and nonverbal behavior.

b. Affective: All but one pair of judges scored above the 73 per cent standard for both teacher and student nonverbal behavior. Only two pairs of judges had agreement scores that met the acceptable standard for verbal behavior.

c. Kinetic-kinesthetic: All pairs of judges had agreement scores above the standard for student nonverbal behavior (81 to 91 per cent), and a range from 51 to 78 per cent for teacher nonverbal behavior.

d. Technical: Scores for paired judges for verbal behavior had a range from 49 to 100 per cent. The range for nonverbal behavior was from zero to 96 per

cent, with only three pairs of judges scoring above zero per cent agreement.

6. Objectivity: Interjudge Agreement Total Per Cent Scores by Domain.
   a. The greatest overall agreement was in The Cognitive Domain with a range of from 70 to 78 per cent.
   b. The least overall agreement was in The Affective Domain with a range of from 28 to 50 percent.
   c. The smallest range in agreement scores was in The Kinetic-kinesthetic Domain with a range of from 50 to 55 per cent.
   d. The next to the largest range in agreement scores was in The Technical division with a range of from 50 to 63 per cent.
7. Validity
   a. Construct: All categories but Application (Cognitive) and Silence/Confusion (Technical) were used.
   b. Content: Content validity of the system was established through qualitative and subjective interpretations of the six dance experts.

IMPLICATIONS

The purpose of this study was to develop and examine the feasibility of a procedure to systematically describe teacher-student verbal and nonverbal interaction in the teaching of choreography. Two major implications from this study are

suggested: (1) further development of the category system itself so it can be used in research studies, and (2) application to the preparation of teachers of choreography.

Further Development of the Category System

Development of the category system implies refinement of specific categories and the technique for recording. Further refinement would also enhance the possibility of more consistent attainment of acceptable reliability, objectivity, and validity standards.

The results of the study showed that agreement was low for particular behavioral modes in specific Domains. The relevance of certain behavioral modes as a part of each Domain should be examined: Cognitive-nonverbal, Affective-verbal. The specific categories for each of the divisions should be studied in terms of their mutual exclusiveness and all inclusiveness within each division and the total category system. Final decisions on the inclusion of categories could be made following this re-examination.

The technique for recording developed for this study was used by the judges with success in those sections of the category system that were clear. A variation of this recording technique is suggested for use in future multidimensional studies. The recommended variation appropriate for the study under discussion should permit consistent recording of even more detail about teacher-student interaction. Pairs of observers could be used

with a careful delineation of coding responsibilities for each member of the pair or for each pair: verbal/nonverbal, teacher/student, by Domain, and combinations of these. Continued use of the 15 second timed interval is recommended to preserve the quick identification of specific behaviors, and to test the consistency of coding agreement at selected intervals during a lesson.

The small sample of teachers and videotaped lessons probably contributed to the agreement scores attained and infrequent use of some categories. Re-estimation of reliability, objectivity, and validity should be conducted with a larger sample. Once even more acceptable reliability, objectivity, and validity have been attained, research related to interaction and patterns of behavior can be designed. Some areas of possible study are:

1. Patterns of behavior for individual teachers, according to amount of teaching experience, and level of class ability.
2. Patterns of behavior for students in classes of differing ability.
3. Examination of the effect of each organizing principle on the interrelationships among categories and Domains.

Application to Preparation of Teachers of Choreography

Application of the category system in professional preparation programs is suggested in two ways: (1) to analyze the teaching of choreography, and (2) to code sequences of student behavior in an individual choreography course or a series of

choreography courses. Though certain aspects of the category system are in need of refinement, the remaining parts are considered useful.

Actual implementation of the category system in analyzing teacher behavior for in-service and student teaching is seen as a potential contribution to the improvement of teaching. Useful feedback may be obtained by using portions of the category system alone, or in combination, as well as the entire system. The following are suggested topics that may be pursued:

1. Patterns of behavior in specific Domains for classes of specific ability levels.
2. Proportion of verbal and nonverbal behavior.
3. The role of the teacher in evaluative behavior.
4. Identification of behavior patterns for specific students and the teacher.
5. Identification of the organizing principle most frequently reflected.

It is assumed that the more an individual knows about his teaching behavior, the more possibility there will be for keener sensitivity to classroom activity and the need for changes in patterns in teaching.

Prospective dance teachers may benefit from revised curricula reflecting findings provided by the use of the category system. Patterns of high and low level behavior in all domains and the proportions of teacher-student behaviors are examples of such findings.

Future use of the overall category system is dependent upon acceptance of its complex rationale. The organizing principles are inextricably interwoven in the concept of teaching and learning behaviors that are a part of choreography class. The use of selected portions of the system may necessitate self-training materials, and a plan for more immediate feedback. The application of specific parts of the category system does not imply complete acceptance of the rationale for the whole system.

In summary, the implications for further study focus on refinement of the category system itself, and the application of this system, or parts of it, to the preparation of choreography teachers. The stated implications should serve as stimuli for learning more about choreography and about the intricate operations of thinking, feeling, and acting in the teaching-learning process in choreography class.

BIBLIOGRAPHY

BIBLIOGRAPHY

Abramson, Theodore. "Development and Application of Analysis of Variance Techniques to the Reliability of Observation Schedules." Unpublished Doctor's dissertation, Fordham University, 1969.

Allon, Nancy R. "Systems of Classroom Interaction Analysis: A Discussion of Structural Limitations," Journal of Experimental Education, 38, 2 (1970), 1-3.

American Psychological Association. Standards for Educational and Psychological Tests and Manuals. Washington: American Psychological Association, Inc., 1966.

Amidon, Edmund, and Elizabeth Hunter. "Verbal Interaction in the Classroom: The Verbal Interaction Category System," Interaction Analysis: Theory, Research, and Application, eds. Edmund Amidon and John B. Hough. Reading: Addison-Wesley Publishing Company, 1967. 141-149.

Anderson, Harold H. "The Measurement of Dominative and of Socially Integrative Behavior in Teachers' Contact with Children," Child Development, 10, 2 (1939), 73-89.

Anderson, H. H., J. E. Brewer, and Mary F. Reed. "Studies of Teachers' Classroom Personalities. Follow-up Studies of the Effects of Dominative and Integrative Contacts on Children's Behavior," Applied Psychological Monograph, 10, (1945).

Anderson, Ronald D., Joseph A. Struthers, and Helen H. James. "Development of A Verbal and Non-Verbal Observation Instrument." A paper presented to the American Educational Research Association Annual Convention, March 3, 1970, Minneapolis, Minnesota (ED 040 853).

Anderson, William G. "Descriptive-Analytic Research on Teaching," Quest, Monograph XV (January, 1971), 1-8.

Aschner, Mary Jane. "The Language of Teaching," Teachers College Record, 61, 5 (1960), 242-252.

Aschner, Mary Jane. "The Analysis of Verbal Interaction in the Classroom," Theory and Research in Teaching, ed. Arno A. Bellack. New York: Teachers College Press, Columbia, 1963. 53-70.

Aschner, Mary Jane, and James J. Gallagher. A System for Classifying Thought Processes in the Context of Classroom Verbal Interaction. Chicago: University of Illinois, 1965, Institute for Research on Exceptional Children.

Barr, A. S. "The Measurement and Prediction of Teaching Efficiency: A Summary of Investigations," Journal of Experimental Education, 16, 4 (1948).

Barrett, Kate Ross. "A Procedure for Systematically Describing Teacher-Student Behavior in Primary Physical Education Lessons Implementing the Concept of Movement Education." Unpublished Doctor's dissertation, The University of Wisconsin, 1969.

Barrow, Harold M., and Rosemary McGee. A Practical Approach to Measurement in Physical Education. 2d ed. Philadelphia: Lea and Febiger, 1971.

Bellack, Arno. "Foreward," The Teacher Moves: An Analysis of Non-Verbal Activity, Barbara M. Grant and Dorothy Grant Hennings. New York: Teachers College Press, 1971.

Bijou, Sidney W., Robert F. Peterson, Florence R. Harris, K. Eileen Allen, and Margaret S. Johnston. "Methodology for Experimental Studies of Young Children in Natural Settings," The Psychological Record, 19, 2 (1969), 177-210.

Bloom, Benjamin (ed.). Taxonomy of Educational Objectives: The Classification of Educational Goals, Handbook I: Cognitive Domain. New York: David McKay Company, Inc., 1956.

Bookout, Elizabeth C. "An Observational Study of Teaching Behavior in Relation to the Social-Emotional Climate of Physical Education Classes." Unpublished Doctor's dissertation, New York University, 1965.

Cheney, Gay. "It Is a Gift," Impulse 1969-70. San Francisco: Impulse Publications, Inc., 1970, 65-68.

Ciesla, Lucy Catherine. "The Development of an Objective, Reliable and Valid Tool for the Systematic Description of Selected Teacher Behavior Evident in the Teaching of the Cradle in Lacross to Beginners." Unpublished Master's thesis, The University of North Carolina at Greensboro, 1972.

Cogan, Morris L. "Theory and Design of a Study of Teacher Pupil Interaction," Harvard Educational Review, 26, 4 (1956), 315-342.

Cohen, Selma Jeanne (ed.). Doris Humphrey: An Artist First. Middletown: Wesleyan University Press, 1972.

Crispin, David B. "The Technology of Interaction Analysis," Educational Leadership, 10, (July, 1970), 13-17.

Deelman, Margaret J. "An Investigation into the Effects of Two Different Programs of Physical Education on Certain Aspects of Behavior of First Grade Children." Unpublished Master's thesis, The University of Wisconsin, 1968.

Flanders, Ned A. Teacher Influences, Pupil Attitudes, and Achievement. Cooperative Research Project No. 397, U. S. Office of Education. Minneapolis: University of Minnesota, 1960 (ED 002 865).

Flanders, Ned A. "Teacher Influence in The Classroom," Theory and Research in Teaching, ed. Arno Bellack. New York: Teachers College Press, 1963.

Flanders, Ned A. Teacher Influence, Pupil Attitudes, and Achievement. U. S. Department of Health, Education, and Welfare, Office of Education, Cooperative Research Monography No. 12(OE-25040), Washington: Government Printing Office, 1965.

Flanders, Ned A. Analyzing Teaching Behavior. Reading: Addison-Wesley Publishing Company, 1970.

Gallagher, James J., and Mary J. Aschner. "A Preliminary Report: Analysis of Classroom Interaction," Merrill Palmer Quarterly of Behavior and Development, 9, 3 (July, 1963), 183-194.

Galloway, Charles Millard. "An Exploratory Study of Observational Procedures for Determining Teacher Nonverbal Communication." Unpublished Doctor's dissertation, The University of Florida, 1962.

Galloway, Charles. "Teacher Nonverbal Communication," Educational Leadership, 24 (October, 1966), 55-63.

Galloway, Charles. "Nonverbal Communication," Theory Into Practice, 7, 5 (1968), 172-175.

Galloway, Charles. "Teaching is Communicating: Nonverbal Language in the Classroom," Bulletin 29. Association for Student Teaching, Washington: National Education Association, 1970.

Galloway, Charles. "Teaching is More Than Words," Quest, Monography XV (January, 1971), 67-71.

Galloway, Charles. "Nonverbal Language in the Classroom." (Mimeographed.)

Gasson, Ivo Stuart Henry. "The Development of an Observational Instrument to Record Selected Teacher-Pupil Behaviors in Primary School Physical Education." Unpublished Doctor's dissertation, Ohio State University, 1971.

Grant, Barbara M., and Dorothy Grant Hennings. The Teacher Moves: An Analysis of Non-Verbal Activity. New York: Teachers College Press, 1971.

Guilford, G. P. "Three Faces of Intellect," The American Psychologist, (September, 1959), 1-16.

Halpin, Andrew. "Muted Language," School Review, 68, 1 (1960), 85-104

Harrow, Anita J. Taxonomy of the Psychomotor Domain. New York: David McKay Company, Inc., 1972.

Hawkins, Alma. Creating Through Dance. Englewood Cliffs: Prentice-Hall, Inc., 1964.

Hawthorne, Richard Darryl. "A Model for the Analysis of Teachers' Verbal Pre-Instructional Curricular Decisions and Verbal Instructional Interaction." Unpublished Doctor's dissertation, The University of Wisconsin, 1968.

Hayes, Elizabeth R. An Introduction to the Teaching of Dance. New York: The Ronald Press Company, 1964.

H'Doubler, Margaret. Dance, A Creative Art Experience. Madison: The University of Wisconsin Press, 1957.

Heger, Herbert D. "Analyzing Verbal and Nonverbal Classroom Communication." Washington: U. S. Office of Education, (Summer, 1968), (ED 025-483).

Hering, Doris. Review of Concert. Dance Magazine, 15, 1 (1971), 70.

Horn, Ernest. Distribution of Opportunity for Participation Among the Various Pupils in Classroom Recitations. New York: Teachers College Press, 1914.

Horst, Louis. Pre-Classic Dance Forms. New York: Kamin Dance Publishers, 1960.

Horst, Louis, and Carroll Russell. Modern Dance Forms in Relation to the Other Modern Arts. San Francisco: Impulse Publications, Inc., 1961.

Howey, Kenneth Robert. "The Development of a Model for Systematically Describing the Verbal Interaction in Supervisor Conferences." Unpublished Doctor's dissertation, The University of Wisconsin, 1968.

Hughes, Marie M. "The Assessment of the Quality of Teaching: A Research Report." U. S. Office of Education Cooperative Research Project No. 353. Salt Lake City: The University of Utah, 1959.

Hughes, Marie. "What is Teaching? One Viewpoint," Educational Leadership, 19, (January, 1962), 251-259.

Humphrey, Doris. The Art of Making Dances. New York: Holt, Rinehart and Winston, Inc., 1959.

Jewett, Ann E., L. Sue Jones, Sheryl M. Luneke, and Sarah M. Robinson. "Educational Change Through a Taxonomy for Writing Physical Education Objectives," Quest, Monograph XV, (January, 1971), 32-38.

Krathwohl, David (ed.). Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook II: Affective Domain. New York: David McKay Company, Inc., 1964.

Krevitzky, Nik. Dedication. Impulse 1969-70. San Francisco: Impulse Publications, Inc., 1970, 5-6.

Laban, Rudolf. Modern Educational Dance. 2d ed. ed. Lisa Ullman. London: Macdonald and Evans, Ltd., 1963.

Laban, Rudolf. The Mastery of Movement. 2d ed. London: Macdonald and Evans, Ltd., 1971.

Laban, Rudolf, and F. C. Lawrence. Effort. London: Macdonald and Evans, Ltd., 1947.

Lippincott, Gertrude. "A Quiet Genius Himself-Louis Horst," Focus on Dance V, ed. Miriam Gray. Washington: American Association for Health, Physical Education and Recreation, 1969, 3-6.

Lockhart, Aileene, and Esther Pease. Modern Dance: Building and Teaching Lessons. Dubuque: Wm. C. Brown Company Publishers, 1973.

McConnell, Ann E. "The Relationship Between The Use of Indirect and Direct Nonverbal Behavior of College Women Physical Educators in Activity Classes and Theory Classes." Unpublished Master's thesis, The University of North Carolina at Greensboro, 1971.

McDonagh, Don. The Rise and Fall and Rise of Modern Dance. New York: Outerbridge and Dienstfrey, 1970.

Medley, Donald, and Russell A. Hill. "Dimensions of Classroom Behavior Measured by Two Systems of Interaction Analysis," Educational Leadership, 26, 8 (1969), 821-824.

Medley, Donald M., and H. E. Mitzel. Studies of Teacher Behavior: Refinement of Two Techniques for Assessing Teachers' Classroom Behaviors. New York: Board of Higher Education, City of New York, Division of Teacher Education, Office of Research and Evaluation, 1955.

Medley, Donald M., and H. E. Mitzel. "A Technique for Measuring Classroom Behavior," Journal of Educational Psychology, 49, (1958), 86-92.

Medley, Donald M., and Harold E. Mitzel. "The Scientific Study of Teacher Behavior," Theory and Research in Teaching, ed. Arno A. Bellack. New York: Teachers College Press, 1963a, 79-90.

Medley, Donald M., and Harold E. Mitzel. "Measuring Classroom Behavior by Systematic Observation," Handbook of Research on Teaching, ed. N. L. Gage. Chicago: Rand McNally and Company, 1963b, 247-327.

Minnis, Douglas, and Kenneth Shrable. "Interacting with the Interrogative," The Journal of Teacher Education, 20, (Summer, 1969), 201-212.

Morsh, Joseph E., George G. Burgess, and Paul N. Smith. "Student Achievement as a Measure of Instructor Effectiveness," The Journal of Educational Psychology, 47, 2 (1956), 79-88.

Nikolais, Alwin. "No Man From Mars," The Modern Dance: Seven Statements of Belief, ed. Selma Jeanne Cohen. Middletown: Wesleyan University Press, 1966.

Openshaw, M. Karl, Frederick R. Cyphert in collaboration with Norman V. Overly, and Edgar Ray Smith. "The Development of a Taxonomy for the Classification of Teacher Classroom Behavior." The Ohio State University Research Foundation, Cooperative Research Project No. 2288, September 1, 1963 to May 31, 1965, extension May 31, 1965 to July 31, 1965.

Ornstein, Allan C. "Systematizing Teacher Behavior Research," Phi Delta Kappan, 52, 9 (1971), 551-555.

Perkins, Hugh V. "A Procedure for Assessing the Classroom Behavior of Students and Teachers," American Educational Research Journal, 1 (1964), 249-260.

Phenix, Philip H. Realms of Meaning. New York: McGraw-Hill Book Company, 1964.

Phenix, Philip H. "Relationships of Dance to Other Art Forms," Dance - An Art in Academe, eds. Martin Haberman, and Tobie Meisel. New York: Teachers College Press, 1970, 9-14.

Puckett, Rosewell C. "Making Supervision Objective," School Review, XXXVI, 3 (1928), 209-212.

Rink, Judith A. "An Evaluation of the Movement Responses of Four First Grade Boys to Teacher-Stated Movement Problems." Unpublished Master's thesis, The University of North Carolina at Greensboro, 1969.

Ririe, Shirley Russon. "Selection as a Process," Focus on Dance V., ed. Miriam Gray. Washington: American Association for Health, Physical Education and Recreation, 1969, 45-46.

Rowe, Patricia A. "The Selection of Movement Patterns," Focus on Dance V., ed. Miriam Gray. Washington: American Association for Health, Physical Education and Recreation, 1969, 44-45.

Ryans, David G. "Teacher Behavior Theory and Research Implications for Teacher Education," The Journal of Teacher Education, 14, 3 (1963), 274-293.

Safrit, Margaret J. Evaluation in Physical Education. Englewood Cliffs: Prentice-Hall, Inc., 1973.

Sheets, Maxine. The Phenomenology of Dance. Madison: The University of Wisconsin Press, 1966.

Siegel, Marcia B. At the Vanishing Point. New York: Saturday Review Press, 1972.

Smith, B. Othanel. "A Concept of Teaching," Teachers College Record, 61, 5 (1960), 229-241.

Smith, B. Othanel and Milton Meux. A Study of the Logic of Teaching. U. S. Department of Health, Education, and Welfare, Office of Education, Cooperative Research Project No. 258 (7257). Urbana, Bureau of Educational Research, College of Education, University of Illinois, 1962 (trial edition).

Smith, B. Othanel, and Milton O. Meux. A Study of the Logic of Teaching. Urbana: University of Illinois Press, 1970.

Smith, Nancy W. "A Statement of Philosophy," Designs for Dance. Washington: American Association for Health, Physical Education and Recreation, 1968, 8-9.

Sorell, Walter. "Twentieth Century Trends," Focus on Dance V., ed. Miriam Gray. Washington: American Association for Health, Physical Education and Recreation, 1969, 1-3.

Taba, Hilda, and Freeman F. Elzey. "Teaching Strategies and Thought Processes," Teachers College Record, 65 (March, 1964), 524-534.

Thornton, Samuel. Laban's Theory of Movement: A New Perspective. London: Macdonald and Evans, Ltd., 1971.

Timer, Mae A. "A Technique for Observing Verbal and Nonverbal Interaction in a Laboratory Situation." Paper, State Department of Education, Albany, New York, 1967.

Tompkins, Calvin. The Bride and The Bachelors. New York: The Viking Press, Inc., 1968, 239-296.

Turner, Margery. New Dance: Nonliteral Approaches to Choreography. Pittsburgh: The University of Pittsburgh Press, 1971.

Webb, Jeaninne Nelson. "Improving Reliability Estimates for Systematic Classroom Observations with the TEACHER PRACTICES OBSERVATION RECORD." Unpublished Doctor's dissertation, The University of Florida, 1968.

Webb, Jeaninne. "Taxonomy of Cognitive Behavior: A System for the Analysis of Intellectual Processes," Journal of Research and Development in Education, 4, 1 (1970), 23-33.

Whitehouse, Mary. "Reflections on a Metamorphosis," Impulse 1969-70. San Francisco: Impulse Publications, Inc., 1970, 62-64.

Winer, B. J. Statistical Principles in Experimental Design. 2d. ed. New York: McGraw-Hill Book Company, 1971, 283-289.

Withall, John. "The Development of a Technique for the Measurement of Social-Emotional Climate in the Classroom," Journal of Experimental Education, 17, 3 (1949), 347-361.

APPENDICES

APPENDIX A

Reliability Index Cumulative Agreement for Each Judge by Domain (Tables 26, 27, 28, 29)

TABLE 26

Reliability Index: Cumulative Agreement Cognitive Division
(Source: Tables 10, 12, 14, 16)

Per Cent Agreement	COGNITIVE																					
	Verbal								Nonverbal								Cumulative					
Judge	A	c%	B	c%	C	c%	D	c%	A	c%	B	c%	C	c%	D	c%	A	c%	B	c%	C	c%	D	c%
100									95	95	100	100	100	100	80	80	47	47	50	50	50	50	40	40
91-99	10	10	20	20	25	25	5	5									5	52	10	60	12	62	3	43
82-90	35	45	25	45	20	45	20	25									18	70	12	72	10	72	10	53
73-81	25	70	20	65	35	80	40	65									12	82	10	82	17	89	20	73
64-72	5	75	20	85			20	85									3	85	10	92			10	83
55-63	5	80	5	90	10	90											2	87	3	95	5	94		
46-54	5	85	10	100	5	95											3	90	5	100	3	97		
37-45	10	95			5	100	5	90									5	95					2	85
28-36	5	100															2	97						
19-27																								
10-18							5	95															2	87
1- 9																								
0					5	100	5	100	5	100					20	100	3	100			3	100	13	100
Total		100		100		100		100		100						100		100		100		100		100

c% = cumulative per cent

TABLE 27

Reliability Index: Cumulative Agreement Affective Division

Per Cent Agreement	AFFECTIVE																							
	Verbal								Nonverbal								Cumulative							
Judge	A	c%	B	c%	C	c%	D	c%	A	c%	B	c%	C	c%	D	c%	A	c%	B	c%	C	c%	D	c%
100	30	30	10	10	45	45	50	50	5	5	5	5			5	5	17	17	7	7	22	22	27	27
91-99									20	25	10	15	5	5	15	20	12	27	5	12	3	25	7	34
82-90	10	40					5	55	15	40	30	45	35	40	25	45	13	40	15	27	17	42	15	49
73-81	5	45	5	15			5	60	5	45	5	50	25	65	25	70	5	45	5	32	13	55	15	64
64-72	10	55	5	20			5	65	25	70	10	60	10	75	15	85	17	62	7	39	5	60	10	74
55-63			10	30					10	80	15	75	15	90	10	95	5	67	13	52	7	67	5	79
46-54			10	40			5	70	5	85	5	80			5	100	3	70	7	59			5	84
37-45	10	65	10	50					5	90	15	95					7	77	13	72				
28-36			20	70			5	75			5	100	5	95					13	85	3	70	3	87
19-27			10	80					5	95							3	80	5	90				
10-18									5	100							3	83						
1- 9																								
0	35	100	20	100	55	100	25	100					5	100			17	100	10	100	30	100	13	100
Total		100		100		100				100		100		100		100		100		100		100		100

c% = cumulative per cent

TABLE 28

Reliability Index: Cumulative Agreement Kinetic-Kinesthetic Division

Per Cent Agreement	KINETIC-KINESTHETIC																							
	Verbal								Nonverbal								Cumulative							
Judge	A	c%	B	c%	C	c%	D	c%	A	c%	B	c%	C	c%	D	c%	A	c%	B	c%	C	c%	D	c%
100	40	40	50	50	35	35	50	50	40	40	25	25	25	25	30	30	40	40	37	37	30	30	40	40
91-99			10	60	10	45	5	55	20	60	5	30	10	35	15	45	10	50	3	40	10	40	10	50
82-90					10	55			15	75	25	55	15	50	10	55	7	57	13	53	12	52	5	55
73-81	10	50	5	55	5	60	5	60	5	80	10	65	20	70	10	65	7	64	7	60	12	64	7	62
64-72	10	60			5	65	5	65	10	90	10	75	5	75	10	75	10	74	5	65	5	69	7	69
55-63			5	60	5	70					5	80			5	80			5	70	3	72	3	72
46-54	10	70	5	65							10	90	10	85	5	85	5	79	7	77	5	77	3	75
37-45	10	80			5	75											5	84			3	80		
28-36																								
19-27			5	70	5	80	5	70							5	90			3	80	3	83	5	80
10-18													5	90							2	85		
1- 9																								
0	20	100	30	100	20	100	30	100	10	100	10	100	10	100	10	100	16	100	20	100	15	100	20	100
Total		100		100		100		100		100		100		100		100		100		100		100		100

c% = Cumulative per cent

TABLE 29

Reliability Index: Cumulative Agreement Technical Division

Per Cent Agreement	TECHNICAL																							
	Verbal								Nonverbal								Cumulative							
Judge	A	c%	B	c%	C	c%	D	c%	A	c%	B	c%	C	c%	D	c%	A	c%	B	c%	C	c%	D	c%
100			20	20			10	10	75	75	85	85	75	75	95	95	37	37	53	53	37	37	52	52
91-99	20	20	15	35			15	25									10	47	7	60			7	59
82-90	10	30	15	50	20	20	25	50	5	80							7	54	7	67	10	47	12	71
73-81	10	40	15	65	10	30			10	90							10	64	7	74	5	52		
64-72	20	60	15	80	10	40	15	65	5	95			5	80			13	77	7	81	7	59	7	78
55-63					15	55	5	70					5	85							10	69	3	81
46-54	20	80	10	90	20	75	5	75									10	87	5	86	10	79	3	84
37-45	5	85	5	95													3	90	2	88				
28-36	5	90	5	100	5	80	5	80									3	93	3	92	3	82	3	87
19-27					5	85	5	85													3	85	3	90
10-18																								
1- 9							5	90															3	93
0	10	100			15	100	10	100	5	100	15	100	15	100	5	100	7	100	8	100	15	100	7	100
Total		100				100		100		100		100		100		100		100		100		100		100

c% = cumulative per cent

APPENDIX B

Percentage of Agreement Scores
for All Pairs of Judges
(Table 30)

Table 30

Percentage of Agreement Scores for All Pairs of Judges for All 10 Tapes by Domain and Subdivision

Paired Sub. Tape	(D)	AB				AC				AD			
		TV	SV	TNV	SNV	TV	SV	TNV	SNV	TV	SV	TNV	SNV
	C	82	57	**	**	46	85	**	**	10	46	**	**
	A	00	59	46	36	00	57	81	89	00	22	72	78
I	K	00	15	**	77	48	61	**	77	56	10	**	75
	T	94	54	**	00	65	84	00	00	15	07	**	00
	C	85	73	**	**	92	74	**	**	86	77	**	**
	A	00	00	23	68	**	**	76	70	**	**	74	54
II	K	28	**	00	57	12	**	00	53	12	**	00	57
	T	79	70	**	00	87	28	**	00	97	28	**	00
	C	61	85	**	**	85	50	**	**	78	19	**	**
	A	35	00	62	67	00	**	76	54	80	**	60	31
III	K	06	00	44	66	82	00	67	83	62	00	44	80
	T	76	80	**	**	69	50	**	**	41	00	**	**
	C	58	80	**	**	67	00	**	**	68	00	**	**
	A	**	**	73	19	00	**	76	17	**	**	67	18
IV	K	**	**	**	72	00	00	**	74	**	**	**	62
	T	60	80	**	**	40	00	**	**	36	00	**	**
	C	68	85	**	**	77	67	**	**	72	80	**	**
	A	67	80	62	69	00	00	33	41	67	00	47	52
V	K	59	**	**	79	48	**	**	80	44	**	**	88
	T	00	80	**	**	00	00	**	**	00	80	**	**
	C	67	40	**	**	62	27	**	**	48	50	**	**
	A	00	67	**	44	44	00	00	57	77	00	**	69
VI	K	33	**	**	68	80	**	**	85	00	**	**	65
	T	00	40	**	**	00	67	**	00	**	50	**	00
	C	65	74	**	**	84	84	**	**	68	74	**	**
	A	67	52	78	82	70	10	40	71	00	32	77	55
VII	K	**	14	67	81	00	67	33	88	00	91	57	84
	T	59	51	**	**	36	91	**	**	53	80	**	**
	C	87	64	**	00	91	81	**	00	83	54	**	00
	A	44	**	81	74	27	**	73	67	75	**	70	74
VIII	K	27	00	**	76	67	00	00	81	84	00	00	76
	T	82	80	00	**	100	67	**	00	61	28	**	**
	C	82	86	**	**	77	68	**	**	82	79	**	**
	A	00	30	65	95	00	67	46	82	40	00	72	80
IX	K	**	00	**	**	**	00	**	**	00	**	**	**
	T	72	84	**	**	80	97	**	**	74	78	**	**
	C	87	44	**	**	87	41	**	**	79	29	**	**
	A	65	00	42	86	27	**	60	83	97	**	45	90
X	K	75	**	00	81	91	**	00	78	36	**	00	79
	T	56	55	00	00	61	25	**	00	74	55	**	00

Paired = Paired Judges; Sub. = Subdivision; (D) = Division
TV = teacher verbal; SV = student verbal; TNV = teacher nonverbal, SNV = student nonverbal; C = Cognitive; A = Affective; K = Kinetic-kinesthetic; T = Technical

Table 30 (continued)

Paired Sub. Tape	(D)	BC TV	BC SV	BC TNV	BC SNV	BD TV	BD SV	BD TNV	BD SNV	CD TV	CD SV	CD TNV	CD SNV
	C	51	56	**	**	12	25	**	**	28	36	**	**
	A	54	28	55	86	15	10	62	77	31	44	91	85
I	K	00	26	**	92	00	59	**	62	49	17	**	65
	T	60	42	00	**	13	02	**	**	28	09	00	**
	C	85	86	**	**	79	54	**	**	89	55	**	**
	A	00	00	20	97	00	00	40	80	**	**	61	76
II	K	75	**	89	88	75	**	67	83	100	**	57	77
	T	90	17	**	**	77	17	**	**	91	100	**	**
	C	58	57	**	**	47	33	**	**	72	44	**	**
	A	00	00	58	19	49	00	73	16	00	**	70	97
III	K	02	**	67	69	11	**	81	65	69	**	71	93
	T	92	67	**	**	58	00	**	**	66	00	**	**
	C	70	00	**	**	90	00	**	**	81	**	**	**
	A	00	**	96	68	**	**	89	77	00	**	89	85
IV	K	00	00	**	92	**	**	**	53	00	00	**	62
	T	75	00	**	**	67	00	**	**	89	**	**	**
	C	73	61	**	**	83	69	**	**	89	85	**	**
	A	00	00	30	67	58	00	45	74	00	**	75	71
V	K	54	**	**	82	40	**	**	80	27	**	**	82
	T	57	00	**	**	95	61	**	**	53	00	**	**
	C	75	76	**	**	57	86	**	**	80	63	**	**
	A	00	00	00	43	00	00	**	58	44	**	00	72
VI	K	44	**	**	78	00	**	**	71	00	**	**	74
	T	80	67	**	00	00	86	**	00	00	80	**	47
	C	69	79	**	**	93	89	**	**	71	76	**	**
	A	63	22	31	59	00	61	96	69	00	40	35	51
VII	K	00	17	50	73	00	33	44	77	100	62	53	87
	T	57	44	**	**	89	68	**	**	67	71	**	**
	C	91	70	**	**	90	75	**	**	84	63	**	**
	A	22	**	91	89	27	**	85	90	44	**	96	88
VIII	K	15	**	00	49	44	**	00	80	55	**	40	70
	T	82	86	00	00	50	40	00	**	61	50	**	00
	C	68	75	**	**	78	82	**	**	81	64	**	**
	A	**	16	75	86	00	00	77	78	00	00	59	73
IX	K	**	00	**	**	00	**	**	**	00	00	**	00
	T	67	86	**	**	93	94	**	**	69	81	**	**
	C	84	89	**	**	92	69	**	**	77	69	**	**
	A	18	00	71	91	73	00	67	94	37	**	91	89
X	K	67	**	67	85	52	**	50	91	31	**	80	86
	T	27	57	00	**	78	100	00	**	37	57	**	**

Paired = Paired Judges; Sub. = Subdivision; (D) = Division; TV = teacher verbal; SV = student verbal; TNV = teacher nonverbal; SNV = student nonverbal; C = Cognitive; A = Affective; K = Kinetic-kinesthetic; T = Technical

APPENDIX C

Objectivity: Percentage of Agreements Categorized by Perfect Agreement (**), Acceptable Range (73-100), Range for Positive Indication (60-72), Zero (0), Other Sources (Table 31)

Table 31

Objectivity

Per Cent of Agreements Categorized by Zero (0), Perfect Agreement (**), Acceptable Range (73-100), Range for Positive Indication (60-72), Other Scores

	Paired Judges											
	AB		AC		AD		BC		BD		CD	
	N	%	N	%	N	%	N	%	N	%	N	%
**	53	33	50	31	57	36	51	32	56	35	58	36
73-100	34	21	36	23	33	20	34	21	39	24	36	23
60-72	22	14	18	11	13	8	16	10	12	8	20	12
1-59	30	19	27	17	35	22	34	21	31	19	28	18
Zero	21	13	29	18	22	14	25	16	22	14	18	11
Total	160	100	160	100	160	100	160	100	160	100	160	100

N = 160
% = Per cent of total scores

APPENDIX D

Sample Coding Sheet

SAMPLE CODING SHEET

Tape # 7

Judge D
June 15, 1972

SNVA2a TNVA2a 97	SVC3 T - 101	SNVK8a T - 105	SVC3 T- 109
SNVK8b TNVA2a 98	SVA3b SVC2 102	SNVK8b T - 106	S - T - 110
TVC3 SNVA2a 99	SVC6c T - 103	S - T - SNVA2c 107	S - TNVK8b 111
S - TNVA2a 100	SNVA2a SVC6c 104	SVC3 T - 108	SNVK2 TNVA2a 112

APPENDIX E

Letters to Experts

LETTERS TO EXPERTS

October 20, 1972

Dear

The analysis of interaction in the traditional classroom setting has been the focus of numerous studies. Both verbal and nonverbal classroom interaction have been identified as important in the study of teacher behavior, although the literature reflects a greater concentration on verbal interaction. The combined aspects of interaction in the gymnasium or dance studio need examination.

A doctoral student in the School of Health, Physical Education and Recreation at The University of North Carolina at Greensboro, my dissertation deals with some aspects of teacher behavior in the modern dance setting. The study is an attempt to develop a procedure for systematically describing teacher-student verbal and nonverbal interaction in the teaching of choreography.

Your assistance is sought in helping establish content validity for the system developed to describe teacher-student verbal and nonverbal interaction in choreography class. A brief description of the study, and the way in which you will need to respond follows. After studying this information please complete the enclosed post card, which indicates your willingness to participate, and return by November 1, 1972.

The purpose of this study, again, is to develop a procedure for systematically describing teacher-student verbal and nonverbal interaction in the teaching of choreography. The category system has been developed to identify interaction in three behavioral domains, with specific reference to the mode (verbal or nonverbal), and the person (teacher or student). The three domains are: Cognitive, Affective, and Kinetic-kinesthetic. Cognitive deals with facts and knowledges and closely resembles the taxonomy in the cognitive domain developed by Bloom and others. Affective deals with attitudes, feelings, and values, and the categories relate most closely to the system developed by Galloway for nonverbal communication. The Kinetic-kinesthetic deals with movement as it relates to choreography, and has been developed especially for this study.

If you are willing to participate, the rationale for the category system and the category system itself will be sent to you for further study. The materials to be included

are the title of each category, its definition, and one or more examples to determine if the categories selected and their definitions meet the criteria for a category system. Categories are all-inclusive, yet mutually exclusive.

Your leadership in dance education as a teacher, choreographer, and author make your judgment of this portion of the study particularly valuable in this initial study of teacher behavior in the dance setting.

If you decide you have the time to study the materials, and the topic is of interest, your comments about the category system will need to be returned to me by December 15, 1972.

Thank you very much for your consideration of this request.

Sincerely yours,

Joanne M. Lunt

Dr. Kate R. Barrett,
Dissertation Advisor

November 1, 1972

Dear

Thank you for your willingness to share your expertise in evaluating the category system developed for use in systematically describing teacher-student verbal and nonverbal interaction in the teaching of choreography.

Enclosed are summary comments about the rationale for the category system, and the selection of organization for the categories within each domain of the system. There is no attempt to use full references. Only the works that have been of primary influence have been cited. The second piece of material is the category system itself, with definitions and at least one example for each category in each domain.

Two questions need to be answered in your study of the entire category system: (1) are the categories, as defined, clearly all inclusive of the scope of the system?, and (2) are the categories, as defined, mutually exclusive of every other category in the system? These questions deal with the representativeness and comprehensiveness of the category system. Your comments and suggestions relative to these questions will enable me to discuss the content validity of the system.

No forms or suggested format for your comments have been provided so that you may use the style and organization most convenient for you. Categories for which you make no comments I will assume meet the criteria stated above, all inclusive and mutually exclusive.

Thank you, in advance, for the time and thought spent studying the category system so thoroughly. I hope the proposed return date, December 15, is reasonable. I recognize the mounting obligations at the end of a calendar year and will understand the need for an extension of a few days.

I look forward to your discerning comments.

Sincerely yours,

Joanne M. Lunt

APPENDIX F

Quick Reference Category System

QUICK REFERENCE CATEGORY SYSTEM

COGNITIVE

1. Knowledge - facts, data
2. Comprehension -relat. implication bet. given information
3. Analysis - structure, conditions that affect how it goes together
4. Application - selection of appropriate method, specific info. for specific situation
5. Synthesis - generation of new ideas

6a. Judgment-External Criteria-standards, pre-set forms

6b. Judgment-External Criteria-Quantitative

6c. Judgment-External Criteria-Qualitative

AFFECTIVE

1a. Attend-receptive

1b. Puzzlement/Query

2a. Respond-receptive

2b. Respond-inattentive

2c. Respond-congruent

2d. Respond-incongruent

2e. Respond-satisfaction

2f. Respond-dissatis-faction

3a. Judgment-Internal criteria-Opinion

3b. Judgment - Internal criteria-Kinesthetic

KINETIC-KINESTHETIC

1. Replication - exact

2. Imitation-inc., error

3. Manipulation-rearrange given movement; portions of original observable

4. Experimentation - "bite size", find movement when none is suggested

5a. Improvisation - Group Structured

5b. Improvisation - Inde-pendent Structured

6a. Improvisation - Group Spontaneous

6b. Improvisation-Inde-pendent-Spontaneous

7a. Compose - a dance study for performance

7b. Re-order Major Section

7c. Re-work Single Facet

8a. Performance-Marking walking through, sketch-ing movements

8b. Performance-Full Out total projection through technique, dynamics, etc.

TECHNICAL

X Uncodable

/ silence, confusion

+ class organization